

# SliceFixer's Encyclopedia Texarkana

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## A Short Story

Let me tell you a short story about a successful junior player I once knew. This kid was not all that talented, but through VERY hard work over many years he developed into a very good little player...straight and accurate and very rarely missed the DEAD center of the face. He then played college golf with Fred Couples. Fred hit the ball 50 yards passed him with relative ease. In spite of winning almost every tournament in his State and playing well his freshman year in college, this kid decided that he HAD to add some length. He did not realize that Fred Couples was *Fred Couples*, perhaps the most naturally talented golfer of all time. He just thought this was Fred from Seattle. This kid then got some TERRIBLE advice. "You're not ever going to hit the ball very far with that block fade you hit, you've GOT to swing inside-to-out and release those wrists...turn the toe to the ground at impact." Within six weeks this kid could not hit his ass with a bass fiddle if you had given him ten tries. He TOTALLY lost HIS golfswing. Because he had no idea how he swung the club when he was swinging so well he had no idea how to resurrect his swing. You see, his swing had no *foundation* of knowledge. It was truly the work of observing good ballstrikers and diggin' it outa' tha' ground. No *foundation*...just hard work beating balls. As a result, it took him almost ten years to get IT back. Thousands of hours wasted on ingraining *changes* that were SUPPOSED to be the *answer*, but were not...lessons from some of the games *supposed* great teachers...many of whom TRULY were terrible teachers, but, had marketed themselves brilliantly. A truly frustrating experience.

However, since this kid was ME I can assure you that I wouldn't change a thing. I truly think the Good Lord was simply training me to do what I was destined to do: teach and NOT play. The reason I get such a kick out of some of the supposed answers you see spattered about is the simple fact that most of it I have studied in depth and a LOT of it I tried during my *lost* years. Some of this *instruction* might work for some people, and surely does, but is it the most fundamentally reliable way to swing a golf club?

## How to Ingrain A Great Golfswing

The golf swing is a chain reaction that is based on sound fundamentals and a proper understanding of how the body should operate to ingrain a proper pivot.

The Modern *big muscle* golfswing:

- If you fundamentals are sound (especially grip and posture);
- If your torso pivots properly (IF it does there is NO weight shift);
- The weight TRANSFERS itself by the very action of pivoting properly;
- If your arms remain synchronized to the pivot and the left forearm rotates clockwise;
- Then the club will be on plane;
- The face will be on plane;
- The arms will be wide and in synch with the wound trunk and torso;
- Then it is simply a matter of letting everything go exactly in the opposite way that it wound up;
- There is lateral movement in the transition between backswing to downswing;
- But, the lateral movement is simply a part of getting from your right pivot point (right leg) to your left pivot point (left leg) so that you can unwind aggressively to the left while your hands and arms simply hold onto the club.

However, NO student can be expected to *get* all of this within a short period of time. I tell ALL of my students that *short-term* in golf is ONE year. If they will dedicate themselves for that ONE year they will ingrain a fundamentally sound golf swing which will serve them for MANY years to come.

A lesson a week is GROSS overkill, *unless* you are working on long game one week, pitching and chipping another, then putting, then back to the long game, etc.

This is a pearl of wisdom that Chuck Hogan taught me during my playing days in regards to ingraining a change:

- 60 reps per day
- EVERY rep has a specific intention
- EVERY rep has your FULL attention
- For 21 days.

On the average, it will take you THREE WEEKS to ingrain even the simplest changes in a golf swing. PATIENCE is the single greatest attribute you can possess IF you REALLY want to be a good player; both in building your golf swing and in actually playing the game.

If you will look at a golf swing like a jigsaw puzzle with less than ten pieces and realize that each piece has to be fully *digested* and *ingrained* before another can be added, then you will greatly reduce your frustration and you will find that you improve more consistently.

## An Improvement Plan

To create and build a fundamentally sound golf swing a player MUST be fundamentally sound at address – grip, posture, alignment, stance, and ball position -- with GRIP and POSTURE being the two most important of these fundamentals, by far. There is NO proper number of knuckles or strength of grip; just a parameter of two to four knuckles to work within (somewhat of a grey area). The same is true for posture, etc; there are no exacts within these fundamentals. It all depends on the individual and their swing tendencies, body build, flexibility, etc.

Once you have established sound fundamentals, the player has to learn to swing the clubhead from the left arm at 9:00 to the right arm at 3:00, using the body in the correct manner – the arms synchronized to the body and the clubhead and hands reacting to the body turn. This teaches the player what it *feels* like through the most important area of the golf swing: the impact zone.

## The 9:00 to 3:00 Drill

Consider your arms like hands on a clock. To perform the 9:00 to 3:00 drill properly, you start by TURNING until the left arm is at nine o'clock and the wrists are fully set. Then simply turn through the shot until the right arm is pointed at three o'clock (it will actually be LEFT of three, but at three o'clock high or waist high). The right hand must HOLD THE SET by not ever *releasing*, with the core rotating hard and the arms *releasing* low and left. Once you are able to strike the ball solidly in the center of the face you can then take it to ten o'clock, then eleven, then midnight on the backswing. Most people are SHOCKED how far they can hit a golf ball from such a short backswing and armswing. That is the secret to solid ballstriking. The armswing is so short that the ONLY way to create power is to pivot the torso properly. This is also one of the most valuable shots you will learn. It is great for mastering the wedge game. I even use it as my chip driver on holes where it might call for a big three wood, but a driver might put me through the fairway. It is very easy to hit a dead straight or very slightly fading chip driver. For me, at least, it is an easier shot than a full out three wood, and much more consistent. The same can be said for chip iron shots. Simply take one club more and chip it in there. It is a wonderful shot in the wind as the ball does not have a lot of backspin to balloon the shot. The ball simply has a tendency to fly more consistently shot for shot. Overall, it is a GREAT way to strike your scoring irons, especially the wedges.

Once the player can successfully hit thirty to forty sand wedges using the 2/3 swing (the “9 to 3 drill”), which was built with sound fundamentals, then it is no more than having them learn to turn a touch more in the backswing, which will give them a little more to unwind during the downswing, say a 3/4 swing; then on to the full swing. Three to six months or so later they NOW have a fundamentally sound *motion* in which the arms, hands, and club are synchronized to the body turn. They should now be able to actually play golf with some success. Once they ingrain a fundamentally sound short game they are now in the low to mid 80's. With continued *tweaking* of the golf swing and improvements in short game and course management they can break 80;

then 75; etc. Any person with average athletic ability can be taught a *championship caliber* golf swing in 2 years from nothing.

However, the average person does *not* have the patience, passion, and discipline to properly construct a sound golf swing. They want it RIGHT NOW and there is no such *animal*.

I have seen athletically talented people (especially if they played baseball or tennis) build a great swing in a year or in some cases slightly less. However, such a person is fairly rare and they too MUST have the correct *mindset and attitude*, or they too will fail and become frustrated by their inability to play what looks to be such a simple game. The result is that they either quit playing or go on the *search* for the quick fix, lesson, or technique and bounce around from teacher to teacher, method to method, book to book, etc.

I have been through ALL of this, both as a player and as a teacher, so I KNOW what I am talking about here. "Do as I say and NOT as I did."

If you will make SURE that you are fundamentally sound; work on hitting short wedges no more than 50 yards until you can flight the ball consistently with a consistent divot pattern and spin; you will then find that by simply adjusting your set up for the club in hand that your *entire* game improves exponentially.

Basically, the *motion* required to strike a 50 yard lob wedge properly is the EXACT same motion required to strike a driver properly. The ONLY differences are in the set up: weight distribution, ball position, and spine tilt, which are necessitated to allow the golf ball to be struck at the proper point in the downswing arc and on the correct path and angle of approach. While it may sound fairly complicated it is not. You simply set up the club in the manner in which it was designed to be struck. Driver: slightly on the upswing. Wedge: on the downswing. Mid/long irons: at the bottom of the swing arc, etc.

The MOST important thing is to firmly establish sound fundamentals and a fundamentally sound motion from hip height to hip height at the very beginning. Then the player is going to be off to a great start in developing a great golf swing. However, most people simply want to knock hell from a driver and are not willing to work on the simplest things such as grip/posture, etc. They go spend thousands on a set of clubs, buy a 12 pack, *grab* the club any ole' way, and *swing* as hard as they can. This *method* is by far the most common. It is the primary reason that the average handicap of golfers as a whole has not dropped and will not drop until the golfer changes his/her mindset.

The best approach to improvement is to combine your swing practice *with* your short game work. The vast majority of swing work can be done using a sand wedge. You use the same swing motion with a wedge as all clubs, just with a different set up. If you cannot *flight* a sand wedge properly with consistent divots, trajectory, and solidness then makes you think you would hit a five iron better? Learn to work on things in your golf swing with sand wedge. Become proficient at adjusting the set up to hit a knock down, then hit a *floater*, then a *cut spinner*, then a knockdown draw, etc. If you can do it with a sand wedge you can do it with a driver.

I would also highly suggest learning some backyard/garage drills. Use an impact bag, a sawed off broom, etc. Learn some drills that will ingrain the corrections you need to make using these *tools*. Then do them every day, 60 or so times a day, with total focus. You would be *shocked* how much this type of practice pays off. Take the golf ball away from most people, and they can actually accomplish *changes* more quickly and efficiently. Throw the ball down in front of them and the same old *software* loads.

## The Path to Great Ballstriking

First you need to *maintain and hold your angles* in the transition and into your downswing. This results in the CLUBHEAD attacking from shallow angles; which results in an *inside strike*; which results in the ball starting on your *lines*; which also results in the *heel leading longer*; which results in the toe not catching up until PHYSICS forces it to; which results in a *later release*; which results in a powerful, *leveraged* impact; which results in a penetrating flight with much less IMMEDIATE curvature; ALL of which are *traits* of great ballstriking.

HOW open a player's shoulders are at impact is not critical as long as they are *opening* and they are *open enough* so as to have *room for the arms* and right side to work THROUGH the shot correctly. Square and closed shoulders at impact (which leads to slinging) are a recipe to be *consistently INconsistent*.

Hogan is an important model for open shoulders at impact, but it is important to understand that the amount and speed of Mr. Hogan's *rotation* varied over time (that is, it reduced as he got older) and varied according to the shot he was playing. There is footage of shots where he is 45 degrees open or more at impact. Overall and on AVERAGE over his career, he was +/- 30 degrees open.

According to a study of data from 1991, the PGA tour averages were 5 degrees open at address and 26 at impact. Known, *flippers* where basically square to where they were at address with the *rotators* open as much as 50 degrees. I would imagine the average would be up to at least 30 or more now as *the flippers* are disappearing.

GREAT BALLSTRIKERS strike a golf ball with COMPRESSION and leverage. In order to accomplish this they are MUCH more on their LEFT side (for right-handers obviously) than a lot of *great teachers* seem to understand.

To truly be a GREAT BALLSTRIKER there are certain things that MUST occur. If you follow MOST instruction there today you will NEVER achieve or feel *it*. A small percentage of teachers available today truly demonstrate an understanding of the path to GREAT BALLSTRIKING. Some range from decent to really good at ONE, but to truly be a great one the *recipe* consists of having an intimate knowledge of a bunch of *methods* (understanding their positives and negatives) and have REALLY studied a LOT of footage of GREAT BALLSTRIKERS. It is important to have an understanding of physics, human anatomy, and biomechanics, to actually be able to do it (if under pressure in competition, then even better), and teach for the LOVE of doing so and NOT for money, fame, and ego.

A GREAT BALLSTRIKER is a player who can move it both ways on demand, vary the trajectory a LOT on demand, hit it solid with compression, have the left side of the course defeated, and do it all under pressure.

## How to Become Scratch

In my experience, I have noticed two or three *things* that usually block a five handicapper from improving to *scratch*.

First on the list is a combination of course management and short game. True scratch players (players who can take it on the *road*) have short games that are FAR better than the average (TRUE) five handicapper. Scratch players also manage THEIR games much more efficiently...wasting far fewer shots and saving more shots.

What you need to do is take an HONEST analysis of YOUR game. What are your strengths and weaknesses? Are you a five handicapper who is ONLY a five handicap due to a great short game, course management, and nerves? If so then you need to improve your golf swing so that your ball striking will improve. Are you a poor driver?...wedge player?...bunkers?...putting? Take *stock* of your current average game, really analyze it in fine detail, and then formulate a *winter* plan to improve each area that needs the most work. You would be surprised how much you can improve over a winter IF you dedicate yourself and work on the correct areas of your game.

Another thing I notice with ALL golfers who have played for a number of years is that they ALL tend to *pigeon hole* themselves as a five handicap, ten handicap, etc. When they have improved their games to close to a scratch level from a five on the RANGE AND PRACTICE GREEN, they get on the course and play like they are still a five. They might get it a few under par through six holes and suddenly realize that IF they par in they will shoot 34...and 34 is half of 68...and "holy hell, my lowest score is 73!" By then their anxiety level rises to a level that NASA could not track and they almost immediately make a double or two to get back into their five handicap *comfort zone*.

The secret to overcoming this is to NEVER *see* yourself as a five, ten, or even twenty handicap. Simply learn to TRULY play the game *one shot at a time* with TOTAL and complete COMMITMENT to that particular shot. Add them up at the end. This is what most kids do so brilliantly, they do not know what a handicap is...they just PLAY THE

GAME. Hit it...find it...hit it again...add them up. TRAIN yourself to play like a kid (with the proper, mature, on-course decision making) and you will lower your handicap.

Expectations should be realistic, and in my experience (and I tell this to all beginners), it takes two years of HARD work on the correct elements to build a *championship caliber* golf swing. Now, that does NOT mean that you will be a scratch player, but just that your golf swing technique will NOT be the *element* that is holding you back from *becoming* a scratch player.

However, I have seen it done in six months by a *great* athlete who was very obsessive and *determined* to be a very good player. Truthfully, most golfers will NEVER reach the low 70's. This is not because they are not capable, but, because they will not *sacrifice* to the extent that is necessary to become a good player...either because they simply do not have the time with all of life's responsibilities, or they simply do not have the drive and desire necessary.

## The Release

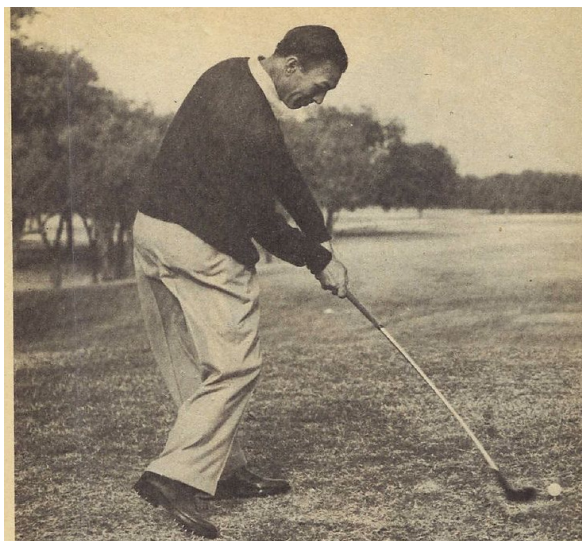
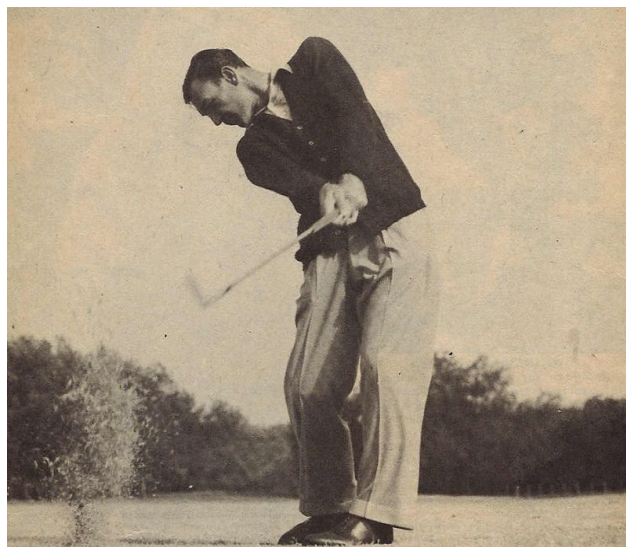
There are two types of releases:

- The player CONSCIOUSLY makes the clubface square up at impact (hitting)
- The physics of the golf swing squares the clubface *naturally or passively* (swinging).

Some call these releases *Centripetal/CP* (the former) and *Centrifugal/CF* (the latter). It is more meaningful to refer to the releases as RELEASING LEFT and DOWN THE LINE because that is what the *eye* sees and is easier to understand (one does not need to spend 10 minutes explaining the differences between CENTRIFUGAL FORCE, in which clubhead is working away from *center*, and CENTRIPETAL ACCELERATION, where the clubhead is working with and around the *center*). The Golf Machine describes both methods as either *pushing* (low and left) or *pulling* (down-the-line) the club through impact. This is a good explanation as it describes the *feeling* through impact perfectly.

Further, there are two types of *natural* (swinging) releases:

- The player is on top of the ball, *going left* with the clubhead...arms disappearing to the LEFT low.
- Another where the player is a bit more *underneath and behind* with the arms and club releasing *down-the-line*.



These photos of Hogan are what shots look like when they are properly struck. The iron shot on the left is perfectly TRAPPED AND COMPRESSED. From these impact positions he could easily have hit a draw or a fade. The KEY is that he is NOT holding the face open. He is simply releasing LEFT AND LATE. You can hit a draw (a *draw with no hands*) and the look in the throughswing will be exactly as Mr. Hogan is in these photos. It only depends



on the clubhead's path and arc relative to the target line and body lines. In his prime Mr. Hogan did not really hit all that many true fades (especially with his irons), instead he hit a shot that *resisted hooking*. Meaning it looked like it would draw, but, just did not to any great amount. He could easily draw the ball without swinging from *inside-out* or *rolling his wrists* or *swinging to right field*. None of these will work consistently for anyone. Even if you get *really* good at that the handsy release, you'll be forever a pusher, hooker, snap hooker. These two photos were taken from the same tee box, with the first being shot from about 45 degree angle to his right front. The key is to look at how his entire core is opened up and rotating left with the arms tagging along for the ride. So much for *square* shoulders at impact being a requirement to strike a golf ball well.

In my opinion, there are really only two basic types of golf swings, and all of the *methods* that I have studied could easily be classified as one or another. There are those methods that release the club with the hands and arms swinging *across* the body, and those that have the arms and trunk working together and the release of the club is simply a byproduct.

## Flipping

*Flipping* is ANY manipulation of the golf club with the hands or wrists. This usually relies on slowing the core to *flip* the club over to square the face WITH the hands and wrists. There is an *inverting* of the butt of the club in the impact zone that relies on the hands and wrists to overcome a *stuck* shaft and clubface.

I have NO problem with someone releasing the club with their ARMS and forearms. I prefer to see the club square itself up naturally, but, if a person wants to "hit" with the arms no biggie. That is perfectly acceptable; just NOT with the hands and wrists.

In most cases a player releases the club in a similar fashion on all full shots and the basic make-up of their pivots and releases remain the same (within' a small margin). Tiger Woods is a bit of an *anomaly*. Tiger Woods sometimes is and sometimes is not a *slinger* (hitter) of the golf club. Watching footage you will notice the differences in his footwork and the way the club and arms release as unmistakable evidence of both release types.

Ernie Els and Fred Couples are clearly slingers of the golf club, with the exception of short shots and certain specialty shots, such as knockdowns, etc. Hogan, Snead, Trevino, Nick Price, David Toms, Christ Dimarco, Jeff Sluman, Jim Furyk, Justin Leonard, Byrd, Trevor Immelman, and Hunter Mahon are examples of *swingers* of the club that release to the left.

I have seen Tiger Woods makes some phenomenally *rotational* swings over the years (especially in the past 18 months and with the irons), but I don't think I have ever seen any footage of him hitting a driver where he did anything other than sling it down the line. In my opinion, that is why he has driven the ball all over hell at some points in his career. He has obviously changed some elements in the past few months and is now aiming more left and open, which allows him to more easily reach his left side pivot-point and clear out a bit more around and left. With this change he is not getting so underneath, up on both toes, and blocked out. The result is the club release more naturally and he hits HARD fades instead of trying to *manipulate* a draw with his hands/arms.

Tiger, Els, and Couples ALL 3 create tremendous *leverage* in their swings, and the longer you can *hold the leverage* the more potential power can be released. However, one potential problem is that if the player holds the angles/power package/leverage DEEP into their downswing, then they had better *know* how to get to their left side/pivot point and rotate their core left and take the butt with them, as Mr. Hogan and Snead did (with the face squaring up and releasing *naturally*). The alternative is that they will be in a *predicament*. If they keep holding the leverage they tend to get more and more blocked or stuck and are then forced to *panic flip* the club to square it. This is VERY unreliable method WITHOUT INCREDIBLE *timing*. Otherwise they must focus more on releasing the club *earlier* in the downswing. Both of these methods are compensations for an earlier error in technique. Although you can hit it a mile, both distance and trajectory, with a combo of *inside, stick, and slinging*, you will never be consistently accurate and will suffer from some wild rides around the course from time to time.

Couples and Els look slow and smooth partly because the acceleration of the core is not predominate with either of them. They both turn and wind more *on top* of the ball in their backswing, have a lot of lower body drive in their transition, then their *core* slows to allow their arms to catch up and square the face. They are both *slingers* of the clubhead, and that is why they both can snap hook or block it off the face of the planet at times when they *mis-time* the *slow and sling* downswing. However, when their *timing is on* they can make the game look unbelievably easy. They both have superior rythm, out of necessity. They have to maintain superior *rhythm* or they would hit it all over hell. Both have a tendency to release the club with the arms ACROSS the body a bit (*armsy* release) which requires the body to slow a bit so the arms can catch up and release the club and square it: *timing*. They are similar players in that their ballstriking is a streaky, not from a *solidity* standpoint, but from an accuracy standpoint. Fred can hit it a mile off-line at times, but always, I mean ALWAYS, finds the center of the face. Els seems to be exactly the same.

## The Grip

There are two basic *types* of golf grips: FINGER AND PALM. PALM is ok if you are a Natural Golf/Moe Norman follower. Otherwise I believe that it is a waste of time and energy and a finger grip is the way to go for most golfers.

There are three versions of FINGER grips:

- Ten Finger or *Baseball* Grip. This is a *great* grip for beginners and people with *really* weak hands, etc. The main drawback is it does not place the hands in a position to work together very well. They are separated on the club. If you manipulate the club with your hands (especially the right hand) to square the face this is a productive grip.
- Interlock Grip. For right handers, the little finger of the right hand is locked or intertwined with the index finger of the left hand. This is a great grip for people with smaller or weaker hands. That being said, Tiger uses it due to Nicklaus' influence (Nicklaus has *tiny* hands). The primary negative of the interlock is that it tends to place the *pressure points* in the *lock*, which is not where they should be.
- Overlap or Vardon Grip. This is the best overall grip for *most* people, if done properly. It tends to meld the two hands together into a cohesive unit the best of the three versions. It places the pressure points where they should be: in the last three fingers of the left hand and the middle two fingers of the right hand.

How do you *place* your hands on the club properly?

First, get a clean white golf glove for your top hand (left handed glove if you swing right handed).

Draw two parallel lines on the glove. The first one runs from the inside of the crease of the last joint of your *left index* finger (furthest from the palm) *diagonally* across your fingers to the outside of the crease of the *FIRST* joint or beginning of the pinky finger (which actually touches the palm). The second line should run from the *inside* of the crease of the first joint of the pinky finger *diagonally* across the fingers to the *outside* of the crease of the last joint of the index finger. Now you should have two parallel lines running diagonally across the fingers of your glove from the pinky finger/lower palm above the little finger to the last joint of the left *index* finger.

Now, picture the butt of the grip of the club as a clock. The top of the grip would be twelve o'clock, parallel to the clubface. Directly opposite of this would be the bottom of the grip or six o'clock. Take the club and hold it just below the grip in your right hand. Aim the club at your left hip socket so that is out in front of your chest but pointing at an angle towards your left hip. Your arms should be extended and waist high...*relaxed*.

Take your left hand and fold it out and extend the fingers and place them *together*. You should now see the two parallel lines on glove. Place the bottom, six o'clock position of the grip between the two parallel lines. *Carefully* fold the upper portion of the left hand over the grip until the left thumb and heel pad are on the center-right

portion of the grip. The left thumb will now be in a position to *support* the shaft at the top of the backswing and to *support* the *blow* at impact. This is *very* important so make *sure* you get it right. If it is done correctly the *webbing* between the left thumb and index finger will be *disguised* to form a "V" which now points somewhere towards your right cheek to your right shoulder. The *left* hand will also feel *very secure* on the club, like you could easily hit balls with just your left arm only.

Now for the right hand...keeping your new and *fundamentally sound* left hand grip on the club, now point the shaft just a tad to the left of your navel and keep it at waist high. Fold your right hand out until you can see all the fingers, like you were going to slap someone. Take the *middle two* fingers of the right hand and *curl* them upwards to form a "C". Place the *bottom* of the grip into this "C" with the six o'clock portion of the grip directly across the creases of the first joint of the middle two fingers that is *not* adjacent to the palm. Fold the fingers around the grip while laying the little finger of the right hand in the gap between the index finger and second finger of the left hand for an overlap.

*Carefully* fold the "slot" formed by the meaty thumb pad (muscle at the base of the thumb that is in the palm) and the "lifeline" of the palm. The left thumb should fit *perfectly* into this "slot," so well that on most people it is almost like a jigsaw puzzle. DO NOT fold the right hand OVER the left thumb. Just *place* the left thumb in the "slot" until you cannot see it. The "webbing" between the right thumb and index finger will *disappear* and also form a "V." This "V" should also be pointing somewhere between your right cheek and your right shoulder.

Ideally with most people, the "V" of the LEFT hand should be pointing a little bit more towards the right shoulder than the "V" of the right hand. They should be parallel to one another or with the "V" of the right hand pointing *slightly* "weaker" than the left.

One other thing that is IMPORTANT is to make sure there is a *slight* "gap" between the right *index* finger and the other fingers of the *right* hand. It will form a sort of a "question mark", "trigger", or upside down "J." Make sure the nine o'clock portion of the shaft is against the "crook" of the *right* index/trigger finger, with the thumb lightly compressing against the 3 o'clock position of the grip. The two fingers *lightly* "pinch" together. If you stick the shaft up in the air, your index finger will feel exactly like you are going to pull the trigger on a pistol. The "trigger finger" ensures that the club does not slip down in between the thumb/index finger at the top of the swing and the trigger also *supports the blow* at impact.

Without a sound grip you will be building a golf swing designed to *overcome* a poor grip rather than a golf swing that is *greatly* aided by a sound grip. As the Great Harvey Penick stated, "show me a person that won't bother to learn to place their hands on a golf club correctly, and I'll show you a person that does NOT want to be a good player!"

Nobody can tell you what the *correct* strength (weak or strong top hand) of grip is for you. That is best determined through trial and error. I tell all of my students, "I don't care if you see 2, 3, or 4 knuckles in your 'top' hand." I like to see how the student's arms naturally *hang* and work from there. By default, most starting points are with two-and-one-half to three knuckles showing on the top hand. The most important point is that both hands complement each other so they can work together in a fundamentally sound fashion. If you *place* your hands on the golf club properly the two hands and wrists can, without thought, allow a proper release. Grip it improperly and they cannot and the player is left to create some compensating move or moves to attempt to make up for the incorrect set of the golf club resulting from a poor grip. *Compensation* is an "error for an error," and sooner or later the compensations break down.

As a general rule, in my experience, the more rotational body speed a player has, the stronger they need to grip the golf club in order for the clubface to square up *naturally* (passive hands) through impact. If not, then they will have to manipulate the face through impact or they will block or slice the golf ball if they are turning through the ball well...or they will be forced to "turn the toe down" to square the face (resulting in some quick hook). The slower the player's core/trunk/torso rotation then the *weaker* they should grip so as to ensure the toe does not turn down through impact and create hooks and pulls.

A player that has a tendency to get *stuck* can sometimes benefit *greatly* from strengthening their grip. The fact that the SHAFT is attacking from too far behind the player (too shallow) is compensated for by the face being in a bit stronger position in the downswing. One compensates for the other and the clubface still squares up without manipulation.

You can tell very little in regards to a player's *strength of grip* from a face on view. This is because you cannot see the amount of *hang* of the arms from face on. The *hang* can greatly distort the grip strength. If you have *low* hands like Zoeller or Hubert Green and your grip will *appear* stronger than it is in reality. If you have *high* hands like David Graham or Hogan and it will *appear* weaker than in reality. The same can be said for how far *back or forward* your hands are at address. With hands forward the grip appears weaker; with hands back it appears stronger. You must have the down-the-line view to truly determine how strong a person's grip is in reality.

Try it for yourself. Set up in front of a full length mirror and check out your grip; then *lower* your hands and imitate the hang of Zoeller/Green and watch that left wrist *cup* and *appear* stronger; then stand up taller and allow your hands to work *up* into more of a Moe Norman *single line* set up and watch that left wrist flatten. Now ask yourself this question, "did I change my grip?" Obvious answer is no, you changed how your arms hang from your body (and more than likely your spine tilt too). As an aside, most experts will tell you that Hogan had a "very weak grip," which was not really all that weak. It simply *appeared* weak because he stood so erect and his arms did not hang nearly as much as *modern players*. He had a simple (barely) two-knuckle left hand with "high hands" and a very erect spine/body tilt (the two usually go together).

Most great ball strikers will grip the club in a manner that both hands are *complementing* each other and can "work together as a team."

## Getting In Synch

When you look at a face-on-view, watch the left shoulder. You will likely note for a *hitter* that the left shoulder stops (which indicates the backswing *core* wind up, turn, and pivot is over) and the arms will continue to *travel* for a few frames. Counting these frames will indicate how much *out-of-synch* your arms are versus your *core*. If you eliminate this excess arm motion, you will then be able to REALLY let it ALL go TOGETHER without hesitation.

Once you are able to fully unwind in the downswing and strike virtually EVERY ball right on the button, it is very simple to determine any problems with plane, path, clubface, etc. You will be striking the ball *flush* once everything is working together. All you will need to do is see what kind of ball flight tendencies you have and correct the small errors that cause them.

Once you have proper fundamentals you need a proper pivot; then you need to get your arms and club *in-synch* with the pivot; then you can consistently strike the ball SOLID. Overall that's the hard part. The EASY part is figuring out why the ball has a tendency to pull, push, fade, draw or if the trajectory is too high, low, etc.

A player is ALMOST always better off developing a swing that allows for the body, arms, and club to work in the same direction at all times. Everything works TOGETHER and in unison, *synchronized* AROUND the body.

The SECRET to golf is this, set up fundamentally sound then learn to start the swing together. Allow the arms to swing along with the winding trunk. When the trunk stops winding the arms the club stops also, which is just as the arms and trunk conclude the backswing (or a micro-second before). The lower trunk, knees, and legs initiate the downswing transferring the *rotation* from the right leg to the left leg. Unwind all the power that you wound up and created in the backswing through the ball and around to the left into a perfectly balance finish. The trunk fully rotates over the left leg, the right foot up and on the right toe with very little weight, if any, remaining on the right foot; arms finish around the trunk at shoulder level with the shaft perpendicular to the spine. All in BALANCE.

When I review video footage of all students one of the *key* elements I look for is when the left shoulder (for a right hander) stops winding and turning in the backswing. What I want to see is the arms, hands, and club all stop at the same time, or very close to the same time. They all need to arrive at the *top* together.

A 1 or 2 video frame *gap* is not that big of a deal and many faders will actually have a *very* small *gap* which gets the club slightly behind their trunk and core. They then let everything go *together* and as the club is 1 or 2 frames *late*, the face will be very slightly open. However with such a small *gap* between the body and the club, the radius of the armswing is not destroyed and the club is not stuck behind. If the student is already a good player who fades the ball without a gap, I am not going to emphasize the *gap*.

If the gap is substantial then the arms and right elbow will be *behind* the body in the downswing (trapped) and the clubhead will also be behind the body (stuck). If you do not slow the torso down to let the club and arms catch up from this position, you will either slice or shank the golf ball.

If the student is an average amateur then I would work on eliminating any *gap*. One thing that I have observed is that players are *shocked* just how *far* they can hit a golf ball with what they consider to be a half swing. Once they get the feel for what is *truly* a synchronized golf swing they then understand why today's professionals can hit the ball so far with such smooth swings.

## Hogan's Secret

Hogan DID have a secret that he took to his grave: the *connection* of the upper arms through impact, specifically the upper left arm. As the core unwinds around the left pivot point, the arms are pulled *tight* to the chest, which forces the butt of the shaft to the left thereby squaring the face. To quote Burke, "He always told me, you don't keep this arm (meaning left arm) on your chest long enough in the swing. You gotta' keep it tight to the chest and take it AROUND (unwinding) with your hips and shoulders (core)." He *never* mentions this in any of the legitimate Hogan sources.

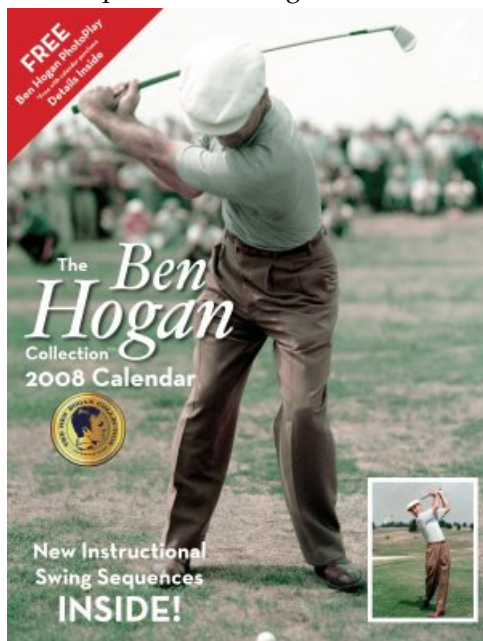
## Transitions

When I first work with a new *good player* student (who has good fundamentals and a fundamentally sound *pivot*), one the most important things I do is to determine what type of *transitional move* they have ingrained in their current swing. The transition is where the rubber meets the road in a good player's golf swing...backswing errors are corrected, the arms and club work in a particular manner that is necessary for that player to get them in a sound position and angles in the downswing, stored energy is *re-routed* back towards the golf ball, etc. In fact,

the *timing* of a particular good player's golf swing is almost always in the *transition*. Change the transition and you change the timing/feel of the whole swing.

Every transition is a combination of both lateral and rotary movement. Players who have more upright backswings (two-planer) can use a transition dominated by lateral movement in order to shallow *both* the arms and club into a position exactly like that of a "one-planer," and then allow everything to rotate through the ball and release together. Lateral motion in the transition shallows both the arms and the club. So the club/arms must be in a more vertical position at the top so that they can be re-routed in the transition into the perfect *rotational* delivery position. (Furyk, Ryan Moore, and Price come to mind.)

A person who has a more rotation dominated transition would need a much more rounded (one-planer) backswing with the clubshaft



slightly laid off and the face square to slightly open. This is a must as a transition dominated by rotary movement will open the shoulders/upper body much quicker and the arms will work *over* their original path. Basically the arms work *over*/steeper and the clubhead/shaft (if properly positioned as described) works *shallower*. This was Hogan's/Moe Norman's/O'Grady's/Knudson's move.

Very few players have their arms working up and down on the same path/arc. This type of *arm action* is hard to time. Driving and shallowing the arms is a *great* timing mechanism and rotating the core with little lateral motion and working the arms *over* is a great timing mechanism. But they both have highly different prerequisites in the backswing that are necessary for the particular transition movements to work. Either way will work perfectly if the backswing prerequisites are met and the appropriate transition is utilized to get the club into the proper position to be delivered from the proper angles via the rotation of the core through the impact zone and into the through swing and finish.

With both swings, the club and shaft end up on a very similar plane and are delivered in much the same way: by rotation. This is the connection many refer to and what I prefer to call *synchronization*. The arms work *with* the core together, synchronized.

So, if a new good player student has a transition dominated by lateral movement then I will go with a more *Price-like* approach. If the player's transition is more rotary then we will use a more *Hogan-like* model. By using the approach of utilizing the player's already ingrained personal *transitional* move, any changes we decide to make will be ingrained *much* more quickly and easily...in some cases almost instantly...rather than taking months or years of *grinding* away trying to reprogram an entirely different golf swing that feels very foreign to the player.

I have found that if I can figure out a way for the good player to keep his current transition sequencing then we are both *way* better off.

The transition from backswing to downswing is GIGANTIC to the success or failure of a player's golf swing. You also need to know that the proper transition is a combination of lateral and rotary movement of the lower body. You ALSO need to know there is no single correct *mixture* between the two. There is just what is correct for that particular player so that his/her arms and club work into a position so that the clubhead can attack from acceptable and fundamentally sound angles. You must have the correct balance for YOU!

The right shoulder *dropping* on the downswing is a result of lateral, core, knees, and thighs moving or driving laterally, which forces the right SIDE down and under. You will not have a whole lot of success if they try and do it with the right shoulder itself. You have to do it with the lower body moving and driving laterally; the right side REACTS; most say they FEEL it in their knees or in their right hip driving.

As a rule, the more the player swings the club AROUND their body (that is, a deeper pivot and turn + shallow, flat arms and club + square to SLIGHTLY open clubface) the less lateral drive is required in the transition to get to the left pivot point and the quicker the player can *unwind and rotate left*.

A player's TRANSITION MUST *match* their backswing. You must have the correct transition sequence for YOU. While one player can correct backswing errors in the transition another player with a seemingly flawless backswing can DESTROY their swing in the transition.

Having the shaft at a 90 degree angle to the left arm when the left arm is at 9 o'clock is one check point, but NOT a requirement for a great golf swing. Roughly half or more of great ball strikers are NOT at 90 degrees shortly thereafter the 9 o'clock point of the backswing. The MOST important thing is that your wrists are fully cocked (set) at the top of the backswing and your arms are in synch with your trunk and core.

The transition and downswing are MUCH more important than the backswing. There are MANY variations of the backswing and differences in the transition between great ballstrikers, but they are ALL very much alike through the ball. It does help to have a simple backswing so as to eliminate moving parts, which makes the overall swing MUCH simpler.

## Rotational versus Lateral Movement

The downswing must be led by the lower body. If the upper body and upper trunk are pivoted properly you cannot help but lead with the lower trunk, hips, and knees. Some players *feel* it in the right knee, others in the right hip, others again in the left hip. Once the transition to the left pivot point and left leg is complete you can then let it all unwind to the left as hard as you can while remaining in balance. This type of pivot does not require a large lateral movement to get to the left side. If you want to *feel* it do this:

Set up a camera tripod (without the camera). Shorten one leg until it is on the exact same angle as your spine at address, then back into the tripod until your lower spine is against the tripod, then perform a pivot/turn AROUND the tripod section that is resting on your back. If you were set up correctly you will note that your weight transferred to your right side at the top of the backswing without any conscious thought. Then rotate around the tripod again to the finish position. You will note that your weight is now on your left side, fully transferred, and you did not think about it for a second. All you did was *pivot* properly.

I spent countless hours *trying* to ingrain a *bump* to my left side, and all I got for it was a HUGE push, pushfade, or pushhook. I then watched a Hogan swing that I had on tape and noticed that his left hip at the top of the backswing was EXACTLY where it had been in the set-up when he reached the top of his backswing. In other words, he turned more INTO his right side rather than OVER his right side like most modern players do today (which necessitates quite a bit of lateral movement to get to the left side/pivot point).

What you want to *feel* is your right butt cheek working *backwards* away from the ball in the takeaway and backswing while maintaining your right knee flex. You will be *turning* into your right side properly. Do not be afraid to let the head rotate and move, but just do not let the lower body float and slide. Lower body slides can be a death move for some good players and sentence them to an interesting game of *alternate* shot: pull, wipe, pull, wipe...

Now, make no mistake, Hogan's hips wound up and rotated a TON...more than is common in a lot of today's players. However, his left hip socket, when viewed from a face on position, had not moved laterally away from the target as is found in most players today.

THAT one thing basically turned my golf swing around. I then learned to turn in a way that eliminated the need to drive the lower body ten miles laterally to get to the left side. A lot of people THINK Hogan worked laterally a TON, but he really did not. He basically wound up his ENTIRE body and then unwound his ENTIRE body without a lot of lateral motion. Lateral motion does not create speed; rotary motion creates speed; lateral motion can create lag, and lateral motion can shallow the arms/club; but an overabundance of lateral motion spells inconsistency. For two years I played fairly well with a method that utilized a TON of lateral motion. However, at the end of this *journey*, I KNEW in the back of my mind there was a better way. I was not swinging the same way I did in my late teens, which was MUCH more *rotational*. So I turned my attention to Hogan's 5 Lessons, and was told to read Mike Hebron's The Inside Moves The Outside. Those 2 books became my text books and my video camera became my eye, and it worked for me.

If you are going to create speed, do you want a tire rotating around a bent axle, or a straight axle? Would you rather have a tire that is in balance or one that is out of balance? Does a figure skater's rotational speed increase or decrease when they pull their arms closer to their body and the axis of rotation? Does the figure skater's rotational speed increase or decrease as the blade of the skate has less steel on the ice's surface and the circle of the blade is rotating around gets smaller? Imagine attaching a shaft to that figure skater, the tighter and faster the ice skater rotated the faster the club would travel...the faster the *inside* moves the faster the *outside* goes.

I am NOT saying that everyone has to swing this way, as a lot of people should not. But what I am saying is this: swinging rotationally is the best way to hit a golf ball your maximum distance without sacrificing accuracy...provided you are athletically capable. Rotation is MUCH more effective in creating speed and creating consistent ARCS of the body, arms, and clubhead where all 3 ARCS are working TOGETHER.

When a golf swing has a lot of lateral movement, all 3 arcs move with the lateral movement, but the BALL does not. Hence, the lateral movement better be very *grooved* or inconsistent ball flight will be the result.

The downswing must be led by the lower body. However, if the upper body, trunk, and upper trunk pivots properly, you cannot help but lead with the lower body, lower trunk, hips, and knees. Some players *feel* it in the right knee; others *feel* in the right hip; others again *feel* in the left hip. However, once the transition to the left pivot point and left leg is complete you can then LET IT RIP. Unwind left as hard as you can while remaining in balance.

In order for this weight transfer to work properly, however, you must make sure that your spine is on a slight tilt away from the target. With a short iron, your left leg needs to be vertical (where you can draw a 90 degree line from your left foot's *outstep* to the outside of your left hip and, in some cases, the outside of the left knee). This is basically the old *reverse K* set up. With a driver, your left hip will be 2" to 3" outside of the 90 degree line, and the outside of your left shoulder would be 5" to 6" off of the line. As a result of this, you will have more weight on your right at address with the driver (40 percent left, 60 percent right) is a good starting point. With a short to mid-iron, 60/40 will favor your left side.

If you set up with a vertical spine angle, or even worse, with your spine leaning TOWARDS the target, your hips will almost inevitably slide laterally away from the target in the beginning of the backswing and your right knee will lose its flex. This is the CLASSIC reverse pivot. It is set up by the *set-up*, and the misconception that you MUST *shift* your weight laterally in the backswing.

The weight in the backswing will *transfer* itself if you set-up and pivot/turn correctly INTO your right side and NOT OVER your right side. A LOT of fairly good players pivot over the right side when they set up poorly. This *type* of good player will have a tremendous amount of lateral slide of the whole body to the right in the backswing. This leads to a LOT of lateral movement in the downswing, which results in serious inconsistency.

The average golfer simply slides the hips laterally, which slides and angles the right *pivot point*. This makes it difficult to impossible to turn properly and transfer your weight properly. They are then in a *reverse pivot* (DEAD). To prevent this, you need to set-up on the correct angles as above. I have personally witnessed *miracles* occur with a lot of players by simply changing their set-up angles at address. Over the Top slicers can then immediately hit draws. Players who take divots as big as hunting boots immediately take much shallower and uniform divots...

In order to cure excessive lateral motion (the *sway-load*), it helps to hit a LOT of balls with your feet together until you can get the *feeling* of basically just *winding and unwinding*, letting the arms and club react, and letting the ball simply *get in the way*. With solid mechanics, a player should be able to hit the ball ninety percent of their *normal* distance with their feet together and without inaccuracy.

When you place your feet together you cannot *sway*, as the only thing you can do is either swing totally with your arms (which is neither effective nor powerful), or you MUST rotate the *core* back and through to create *speed* because your trunk and core is FORCED to wind and unwind in a TIGHT axis. You will rotate about ALMOST a single AXIS as the two pivot points are so close together. In reality you will transfer into the right axis and then simply, from unwinding properly, TRANSFER to the LEFT pivot point. That is why, even with your feet together, you will *feel* your right heel being *pulled* off the ground in the finish (on top of your left leg and rotated left). Even with your feet together there is a *pivot*; just a *smaller* and more compact one.

When you sway-load, your right pivot point moves and it becomes very difficult to TURN INTO your finish and you *slide over*. Even if you manage to *recover* and get turned in behind the ball, you have now moved *off the ball* and MUST *slide* your WHOLE body laterally in the transition to get back into a decent relationship relative to the ball. For most sway-loaders, if they stay where they are at the top of their backswing, they are dead... too far behind the ball. If their lower body drives enough to get to the left pivot point, the upper body will be way *underneath*, with no chance of squaring the face without slinging and releasing the arms. This results in HOOKS, usually snap hooks if you do not *time* it right. If you do slide back towards the ball on your downswing with your whole body, the head has to *stabilize* (stop moving laterally) at just the right moment or you will get too much *on top* of the ball. This is fine for an iron, but *not* a driver. This results in wipe rights, pulls, pull hooks, pull fades.



## Inside versus Outside

First, the terminology to think about is NOT hand motions, but hand AND arm motions. A lot of *old school* teachers think the big circle (actually an ellipse) that the clubhead travels upon CONTROLS the MUCH smaller semi-circle arc that the body turns upon. They basically believe that the OUTSIDE controls the INSIDE. The modern *big muscle* golf swing is opposite: the INSIDE controls the OUTSIDE.

As for myself, I would prefer to let something that moves just few feet be the controlling factor rather than something moving upwards of forty feet. The big muscles are more efficient in creating speed and squaring the clubface consistently.

If you teach somebody proper fundamentals; teach them how to pivot the core properly; teach them how the arms work in synch with the core, *allowing* them to rotate properly; then you have taught them a golf swing that will last a lifetime and will result in them being much more consistent day to day. While a lot of *old school* teachers is a very passionate and good teachers, the methods are outdated, and if ingrained, will result in a LOT of pushes, hooks, and snap-hooks under pressure as well as the student NOT being able to hit the ball as far as they are capable of doing.

Many *old school* teachers believe that the shoulders should be square to the target line or slightly closed at impact. The Sport Tech analyzer study of tour players from the mid 90's showed that the shoulders of tour players are, on average, 26 degrees more open at impact than at address. You also do not see the GREAT ball strikers chasing the ball down the target line with their right arms. The arms work *together* on an arc parallel to the arc that the core is unwinding upon, and the hands do nothing more than hold onto the club. Video of both Hogan and Snead from their prime years, while quite different at the top of the backswing (and they were), shows that through impact and into the finish they are almost DEAD ON exactly alike! The same can be said for Price, Sergio, Furyk, Toms, etc.

## Spine Angle, Shoulders, and Weight Distribution

Why would you want to EVER set your shoulders "level" at address when your right hand is 3 inches BELOW your left hand on the club? Your right shoulder should ALWAYS be the same amount below your left shoulder as your right hand is BELOW the left on the club. NEVER level your shoulders at address for a *normal* golf shot. What levels the shoulders in a fundamentally sound set-up is placing more weight on your left side at address. The ONLY time your shoulders should be CLOSE to level with the ground would be when you have 80 percent or more of your weight set on your left side for a pitch/chip or a shot off of a really bare lie when the ball is way back in your stance, even then it is NOT the shoulders that are creating the appearance of being level, but the fact that you are leaning/setting weight left. The more the weight is set left the less spine tilt you will have but you will ALWAYS have basically the same spine tilt as compared to level of your hips.

If you study tape of great ballstrikers you will notice that the flex in their individual knees will vary depending on how much weight is set left versus right. Weight more left will result in *slightly* more knee flex in the left leg. With weight set more right for a driver there is slightly more flex in the right leg...

If the shoulders are too level at address, and you do not have enough spine tilt, you will be too much "on top of the ball" at address. You will then be REQUIRED to *slide* your upper body in the backswing (which usually results in the WHOLE body moving laterally) to get to your right side in order to achieve the proper body angles at impact. This is a MUCH more complicated move than necessary, requiring superior timing.

Most amateurs, if they set up too much on top of the ball will simply slide back, then slide forward, then get on top of the ball too much at impact. Setting up too much "on top of the ball" will result in being "ahead of the ball" at impact, which will inevitably cause you to release the club early in order to square the face, a slight *cast*.

As a result, all you can hit with woods are wipes, pulls, pull hooks, pull fades. With the irons you cannot strike the ball consistently, some fat, some thin, some perfect, some pulls, some wipes, etc.

The average golfer has no idea how much into their left side a good player, tour player, and good swinger is through the impact zone. You need to be *on top* of an iron to really compress it into the turf (trap). It is a must to get transferred to your left side. While I would not endorse getting out ahead of the ball, but if given a choice with an iron of hanging back versus getting *slightly* out ahead of it and still being able to compress the ball, I would take getting a little bit out ahead of it.

There should more weight on the left side at set up and the through swing than what most teach. The left pivot point is a point basically from your left heel vertically. If you *turn over your right side* as is most commonly found within high quality golf swings, you will have to *bump* and drive laterally to get to your left pivot point. I have always found that *move* to be hard to ingrain and *very* inconsistent. As the golf swing is *circular* in nature, a big lateral drive always seems to make the swing more *elliptical* and less like a true *circle*. When the *circles* and *arcs* within the golf swing become less consistent, the center of the face is harder to find. Hence, I have tried to figure out a way to eliminate as much of it as is physically possible considering you have two legs.

What I want most players to do is "turn INTO their right side." If performed properly, this eliminates the need for a big *bump* in the transition to get to the left pivot point. The lateral transition to the left pivot point is contained within the core rotation, it is there, but it is not conscious. It is easy to spot on film, which is especially revealing for a camera mounted in the roof

To ingrain the transfer of weight, I use a small sponge that is cut to fit inside and *underneath* the left arch and out-step so that it is slightly taller than the amount needed to fill up the space. At address with a short iron the *pressure* on the sponge is about a 7 to 8 out of 10. The player winds up into their right side and the *feel* of the sponge compressing changes from an 8 to a 4 or 5. In the transition, the player compresses the sponge to 10 out of 10, or tries to anyway. What actually happens is the left hip and left knee *stack* over one another and the left pivot point is created. At the same time the upper body begins to unwind with the full angle and set of the left arm and shaft maintained. The *feeling* is that the arms and club are being pulled *down* (that is, the butt of the club is being pulled *down*). We focus on the feeling of pulling down then around or down and then left. As the left pivot point is created the core and arms beginning to unwind *left* and accelerate in the opposite direction to which they wound up. The core, arms, and trunk are all released TOGETHER as the shoulder and upper body is catching up and will soon *overtake* the hips. While the butt of the club is being pulled left, the upper arms are being *pulled* to the upper chest, which I call *connecting*, and EVERYTHING is working together and RELEASES together. From a down-the-line view, you see the hands and clubhead disappear to the left at waist level. The right wrist still has some of its *set* at impact and when it disappears in front of the core, the right arm and hands reappear at or below the shoulder plane. This is what I call RELEASED LEFT. The left wrist will be *cupping* and releasing and the toe is either in a *half roll* or *full roll* position depending on the player and the shot being played. This IS a point that I stress: the right wrist is set close to 45 degrees at the top and the left. With a driver, it will appear in the opposite position approximately 45 degrees *cupped* at the same point on the opposite side of the body as it was at the top.

The SECRET to keeping the left wrist from breaking down is NOT in the LEFT wrist, but in learning to synch up your arms to your core rotation and winding so that you can maintain your core's rotational speed through impact. It is a *very* strong *pulling* feeling created by the left side of the trunk that was *stretched* at the top being *pulled* by the clearing and unwinding of the *lower trunk releasing* around the left pivot point and left leg. It is like a big *rubber band* that you stretch out in the backswing and that rebounds or snaps back in the transition, downswing, and throughswing. The right side SUPPORTS the club and blow. Physics *releases* the clubhead *naturally* as the left side *clears* and the right side *releases*.

## The Legs, The Right Foot, and The Pivot

There is always an underlying reason why a player spring casts (*flips*): improper pivot, run-off arms, weak grip, etc. These underlying reasons force the player to pitch away their leverage in order to square up the clubface. The secret is to figure out the primary culprit and repair and ingrain.

You will not see great ballstriker's feet jumping all over the place like a Gene Kelly tap dance. When this happens, it indicates that their legs are in more of a *reactionary mode* rather than *driving the bus*. The CORE is in charge and not the legs themselves. Core movement tends to create ROTATION while the legs tend to create LATERAL motion, which is not desirable. The ONLY exceptions would be exemplified by players like Furyk who, due to their backswing pivot and armswing, are FORCED to reroute the arms and club in order to get the club into an acceptable position so it can release itself, using physics instead of FIGHTING it.

The *quieter* the legs the more *rotational* the pivot. Since the golf swing is circular in nature, the more *rotational* the pivot (and, therefore, the more rotational the resulting golf swing), the better and more consistent and repeatable the player's golf swing.

What most do not understand about *right heel lift*, is that the right foot can be *motivated* to move in any number of ways, and the *action* of the player's right foot is a GREAT indication and clue as to how the player is pivoting. Leg drive, *backing out* (or as I call it, *humping the goat*), proper or improper use of the lower core (or the upper core), right knee working backwards up and underneath, sliding, etc. all influence the right foot in different ways.

The right foot should be REACTING to the actions of the lower core. Roll to the instep as weight is TRANSFERRED to the left side followed by the heel being PULLED off the ground and working onto the toe in the finish. As a GENERAL rule, the further the player has to go to reach their left pivot point around left leg the higher the right heel will be at impact. The same is true for the more underneath vs. *on top* (steep vs. *shallow*; Old School vs. *Modern*).

While there are probably dozens of possible combinations of pivot points, there are only two *types* of *rotationally based* pivots that are fundamentally sound. Proper pivot action results in a swing where everything works together, forward and around in the downswing, with NO manipulation of the clubface being necessary to square the face. This is based on what I've learned, observed, and surmised as to the most efficient way of swinging a golf club. Studying footage, reading, and visiting in regards to the swings of folk's that I knew and know are great ballstrikers.

A few select ballstrikers have had quite a bit in common (mostly from hip high to hip high: 9 to 3). The common denominators of great ballstrikers (Hogan, Snead, Trevino, Bolt, Knudson, Moe Norman, Ken Venturi, O'Grady from the 80's, Toms, Sergio, Immelman, Furyk, etc.) can be implementing into a single *philosophy*, with the elimination of as many UNNECESSARY moving parts as is possible. The philosophy is a SIMPLE swing based on sound fundamentals and based on ROTATIONAL movement and minimal *lateral* movement: less *side to side* and more around.

The philosophy achieves the key impact characteristics of the great ballstrikers, but reduces the amount of lateral motion necessary to transfer. What lateral there is FEELS like it is all *rotation*. The idea is to create less *space* between where the outside of the right hip and thigh are at the top and where they are at impact. Most of this is done with the set up.

Mr. Hogan's lower trunk and hips *floated* a bit and then he *settled into his left hip* just as his arms and upper body concluded the backswing. My philosophy is to just eliminate the *float* (as I cannot figure out any viable reason for it) and set up more where Mr. Hogan ended up at the conclusion of his backswing *turn*. You can do it all by setting up a certain way which allows the player to FEEL like all they do is *turn back and turn through*. While one will move laterally a bit, there is no need to consciously focus on it as it happens *naturally* and easily as a reaction to the backswing pivot. By eliminating the *bump* you have less really good players getting *underneath* and too far inside.

While the legs have a place in a great golf swing, they are FAR from the most important part. A great golf swing can be created and ingrained with basically nothing from mid thigh down being overly *active*. With good players *the legs* can do more to destroy a good golf swing than to create one.

## The Feet

The feet are the "governors" of the golf swing, meaning they control the amount of turn in *both* directions.

The more the Left toe is flared out the harder it is to over-rotate the right hip and the easier it is to clear the left hip/side. The more perpendicular the left foot is to the target line the more you can rotate the right hip away from the target in the backswing (*deeper*) and in the downswing it is much harder to spin out; the left hip/side is in the way and the arms are forced to release more.

The more flared out the right foot is the easier it is to rotate the trunk *deeper* in the backswing. The closer to perpendicular the right foot is in relationship to the target line the harder it is to over-rotate the hips/core.

The wider the stance the harder it is to wind/turn and the easier it is to maintain one's balance. The narrower the stance the easier it is to wind/turn. However, it is also harder to maintain one's balance. One of my all time favorite drills is to hit balls with your feet very close together, which ingrains a rotating feeling and perfect balance. This is a GREAT drill for players of *all* levels.

Every player needs to determine the correct amount of *flare* in each foot that allows them the most efficient *pivot and turn* of the core. This varies a great deal between players as each person's athletic ability and flexibility varies tremendously. Therefore it is my job as a teacher to listen and observe to the student. Together we determine the correct position for them that allows them the *flexibility* to wind up and unwind without losing *control* of either the backswing or downswing. Everyone is different and there is no right or wrong width stance.

## Trajectory

A number of factors go into determining shot trajectory. Angle of attack (path) and how that relates to face angle at and through impact are important. In addition, ball speed and spin rate figure in significantly. Tour players hit it high primarily as a result of their combination of these factors. The hands are in front of the ball (leverage) with all tour players and good ballstrikers for their irons. You will not find any tape or photos of tour players at impact (when the ball first makes contact with the clubface) where the "head has passed the handle."

A highly leveraged golf swing (Sergio, Hogan, Zach Johnson) where the player works the butt of the club LEFT in the impact zone will generally produce a LOWER ballflight than a player who is not as leveraged (Nicklaus, Mickelson, Vijay) and who *slings* the clubhead. In fact, the more LEFT a player works their core, trunk, arms, and the butt of the club, the more they will trap and compress the golf ball against the turf. This will result in a more *compressed* impact and a *lower* ball flight. This will also aid the player's ability to change trajectories by controlling the clubhead in the impact zone. A passive clubface yields significantly more control over the golf ball. Take the leveraged impact to an extreme and you will be a *very* consistent ballstriker who hits the ball on a more *bullet* like trajectory with minimal curvature. *Sling* it and *invert* the butt of the club and the player will tend to hit it higher and miss both ways.

You can *sling* the clubhead from both a shallow/steep or flat/upright angle of attack. You can also work the body/arms/club more left from these same angles. What really matters in determining trajectory is what the player is doing through impact. If the player is behind the ball and releasing down the line, the ball flight will be high. If the player is "on top" of the ball and releasing left, the ball flight will be lower. Furthermore, a player who tends to attack from more inside and goes left will hit it lower and a player who attacks from more down the line and then goes left will tend to hit it higher, but still lower than a *slinger* who attacks from the same angles.

Some schools of thought prefer to alter the release of the club to change trajectories and to help get long irons up in the air. While there is nothing inherently wrong with that philosophy, I prefer the player to slightly alter their set up (which will unconsciously alter the swing) rather than consciously alter the swing itself.

The path for a fade or draw is exactly the same relative to the body lines. It is not necessary to cut across the ball to fade it and hit *inside - out* to draw it. You can do both to work the ball but you will be the *double cross* king due to all of the manipulation of the face and path in the impact zone. If you want to ensure that you do not double cross a shot then you can add pressure to the last 3 fingers of the left hand to fade it, allowing those fingers dominate the grip. For a draw, you could add pressure to the middle 2 fingers of the right hand. While this works, I do not recommend it for everyone. I do know very good players who will do exactly that to work the ball one way or another.

I just think that it is difficult enough to learn ONE swing. You cannot have a cut swing, draw swing, knockdown swing, lowball swing, high ball swing multiplied by all the 13 *field* clubs in your bag. All you really need to do is create a fundamentally sound golf swing and then simply "dial-in" the shot you want to play at set up; you can hit anything you want: high, low, draw, fade, high fade, low fade, knockdown, etc. The SET UP combined with the *dynamics* of the shot that results will *change* the swing. You will finish shorter and lower for a low punch shot; for a towering shot you will finish a little bit more behind the ball, etc. However, the swing MOTION never changes, as it is always a combination of good fundamentals, a fundamentally sound pivot, and proper synchronization of the arms and club to the pivot.

## Set Up Angles

The hands should ALWAYS rest off of the INSIDE of the left thigh for all normal shots. Your arms hang in front of you with your right hand BELOW the left in order to grip the club properly. The right hip should *kick in* towards the left slightly. The right shoulder the same amount below the left as the right hand is below the left. This places the hands off of the INSIDE of the left thigh. The spine is on the same amount of *tilt* away from the target as the right hand is below the left. It is then simply a matter of the type of *ballflight* and angle of attack desired which determines the shaft *angle*. With the ball forward, striking the ball AFTER the bottom of the swing arc is reached (driver) the shaft would be placed at setup on an angle close to vertical or slightly AWAY from the target. With the ball back in the stance, striking the ball on the downswing to "trap" the ball against the turf, the shaft angle at setup would be TOWARDS the target.

In essence, the shaft angle is determined by your weight distribution influences where the clubhead will *bottom out* (that is, where the clubhead arc bottoms).

For instance, with a right handed driver, the player would set up with the ball forward and place more weight on the right side (60 percent right side, 40 percent left side), which will place the body on more *tilt* away from the target. This adds to the natural amount of spine tilt away from the target (which has already been determined by the right hand necessarily being below the left on the club). This *tilt* sets up more of a *sweeping* blow with the ball teed up in the forward part of the stance. An opposing setup would be assumed in order to strike a ball off of hardpan to keep the trajectory LOW (with 20 percent on the right side and up to 80 percent on the left), which requires a definite *downward*, highly *trapped* strike.

If you can ingrain this *natural* set-up, based upon *natural* ANGLES, then you can dramatically change your ball flight by simply adjusting ball position and weight distribution. You can also change the type of *spin* by changing face and body alignment. In this way, you *dial in* the shot desired at the set-up and then make the same swing and pivot for all shots. Any differences in the way the arms and club work through impact and finish would then be dictated by the *set-up* and the swing that results from these *set-up* changes.

Any properly swung driver swing will almost always appear to be *slung* even when it is not. With a driver the player is on quite a bit more tilt at address and throughout the swing. The player is "behind the ball" more than with an iron, so they turn "deeper" with a driver. More turn will result in being further "behind the ball" and

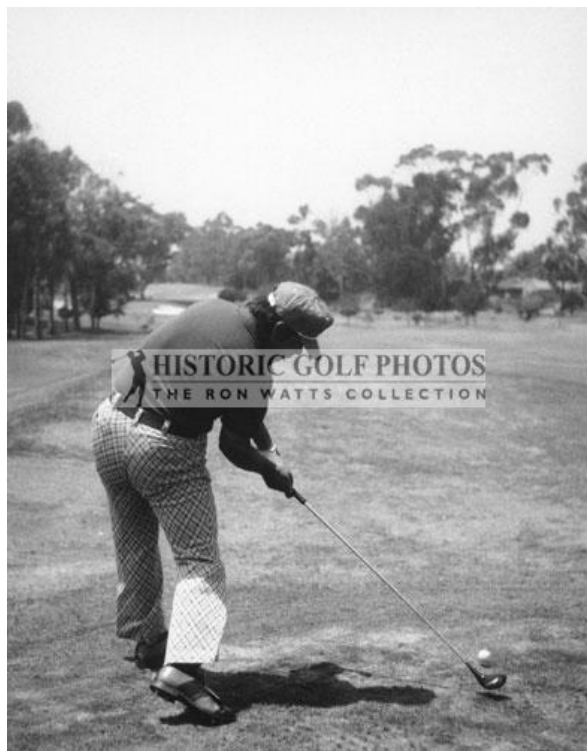
more "into" the right side. As a result, the arms and clubhead are released *less* left than with an iron (if properly struck will be from a position "on top of" the ball). The differences between the angles and weight distribution of an iron versus a driver are *all* set up at the "set up." It is the same swing, and the differences result from different set up "angles" and weight distribution. With the driver, you simply "catch it" later in the arc. As an example, imagine a player lining up to hit a six-iron, whereby their shoulders are parallel to the target line. With a driver (as a result of the set up changes) this same player turns his shoulders ten degrees closed to the target line...ten degrees "deeper." If the player rotates in same way on the downswing for each shot, the upper body will be ten degrees less open at impact for the driver and the arms and club release ten degrees less left.

## The Knucklefade

Basically, the knucklefade is a *fade with a draw swing*. The ball does not so much fade as resist hooking. That is what the old timer's would call it. Essentially the ball stays airborne as long as any shot in the game while maintaining a lower spin rate (similar to a draw), and when it hits the ground it runs like a scalded dog. Plus, as the ball does not curve nearly as much as most *draws* the ball flight is not so much ACROSS the target line, but parallel to the target line so the ball is MUCH less likely to chase off into the rough. A *knucklefade* is still rolling down the fairway when most draws have found the left rough.

Cabrera (when he is swinging well) aims left and hits a HARD knucklefade. There is no *conflict* between his body and his arms as all he has to do is get his body out of the way to make way for his arms and club to release on their own. Tiger, on the other hand, has a tendency to aim right, get a bit *underneath*, and as a result, his body tends to get in the way of the club (blocked out). To compensate, he uses hand and arm *flash speed* to attempt to square the clubface. This is most true for his driver prior to distancing himself from Haney. Tiger's golf swing has improved markedly post-Haney and he is actively trying to fade the driver again. He got a bit closer to the ball, aimed a bit more left, and slightly more upright. A player is FAR less likely to get *body blocked* if they set up square to open, which allows the body to really rotate and clear HARD left, which (if the arms are properly acclimated and in-synch) allows the club to *release itself* lower, more *left*, and around. As a result, NO *manipulation* of the club is necessary to square the face. Done correctly with a driver, a low spin *fade from the inside* is produced, which is the longest, straightest drive on the planet. Cabrera had it at Oakmont (especially on Sunday), but his swing is still a bit *unorthodox* and he will have his own *timing issues* from time to time.

The best ball strikers that I have observed when they are playing well will not move the ball either way more than five yards, unless they are *trying* to *sling* or *carve* it. The best that I have observed will strike the ball on a virtually straight path until the ball reaches its *apex* and the forward momentum is wearing off. Then the slight amount of sidespin kicks in and the ball *falls* one way or another. It could just as likely be a draw or a fade.



EVERY great DRIVER of the ball that I have observed has had the ability to *fade it from the inside*, which is the ability to aim down the left side, set the face aimed at left center, and rotate through the ball to the LEFT and *hold the toe off* (or *lead with the heel*), resulting in a ball that kind of knuckles or bores and then falls right. They KNOW one thing: it ain't goin' LEFT. What some of the old timers used to call "fading it with a *draw* swing."

Driving IS the most important part of a tournament player's game. Drive it straight and with some distance and you can CHOOSE when to go on the offensive or play more conservatively. Drive it in the junk on every other hole and the GOLF COURSE dictates your whole round.....

The knuckle fade is *in my opinion*, the only way to drive the ball for BOTH distance and accuracy. You can count on this type of fade under the highest level of pressure. It is NOT that easy to *groove* for some good players, but "once you got it, you got it, and it ain't goin' nowhere!"

The set up changes needed to hit the knucklefade are as follows:

- Align your body where you want the ball to start.
- Align the clubface to a point between where you want the ball to start and the primary target, so the ball can land and *run out* to your primary target.
- Position the ball *slightly* more forward than *normal*.
- *Some* players like to stand *slightly* closer to the ball.

Once the setup is ready, *concentrate* on two things:

- Unwinding the body *left* in order to delay the *toe catching the heel*. Really try hard to bust it into the left trees with NO HANDS. To practice this, hit some balls with a glove/washrag under your *upper* left armpit so that your upper left side does not *block*, stays *connected* with the trunk, and goes left with the trunk. The thought of trying to "hit the biggest *draw* that I can hit *without* using my hands and arms," usually produces a powerful knucklefade.
- *Always* make sure your last thought is where you want to *start* the ball and *not* where you want it to end up. If you set up correctly and make a good swing it *will* fade slightly. You must trust it to do so. If your last thought is your primary target, then you will almost inevitably swing at the primary target and a push or snap hook will result. So *focus* on bustin' it at your starting point.

Because the mass of the clubhead is on one side of the shaft being swung on an inclined plane, the clubhead naturally wants to open on the backswing and then close on the through swing. The clubhead's natural *arc* is from the inside to back to the inside. When you combine the two -- clubhead traveling from the inside and a clubhead that wants to *close* naturally through impact if the arms are in synch and properly acclimated to the body -- the shot produced is a very *soft* draw. This is difficult to hit with a driver due to the low loft of the clubhead and the fact that the ball does not stay on the face for very long (that is *grip* the face). That is why most good player's draws off of a driver have a sort of *tumbling* draw flight (that is, lacking spin). Because the slightly open face of the *knucklefade* adds a slight amount of loft which keeps the ball on the face for a nano-second longer, the fade has a much better flight.

## The Left Wrist

You should have essentially the same *crinkles* in your left wrist at the top of the backswing that you have at address. There will be some reduction in the amount of *cup* in your left wrist due to the right wrist hinging, but, you will still have a *cup* in your left wrist. Some players, like Jeff Sluman, have the exact same *cup* at the top that they had at address. In fact, the two *images* that I use to stop players from sucking the club inside are as follows:

- Retain the *crinkles* in your left wrist from set up to the top of the backswing.
- Retain the angle that you have at set up between the arms and the shaft until the top of the backswing.

These two keys help to eliminate sucking the clubhead too far inside on the backswing.

For every *flat* left wrist that I have observed with great ball strikers, there have been a 100 that were cupped. Try this as a test: grip a club with a weak left hand and the wrist *flat*. Then try and set (cock) the wrist. You really

cannot move it much. Next, using the same weak left hand grip have somebody grab the head of the club and twist it while you use all the power in your left hand to keep them from twisting it. You really cannot stop them. NOW, grip the left hand in the fingers, with 2 to 2.5/3 knuckles showing on the left hand; repeat both the setting and twisting drills. You will find that not only did your wrist's *range of motion* increase to probably 60 degrees from close to 0 degrees, but, your left hand will now be able to much more easily resist your friend's attempts to twist the club out of your left hand. I can hold an iron in my left hand and let somebody use the head for leverage and they cannot turn it, unless they are quite strong.

I have substantial reminders (vertical ribs) in my grips which help to stabilize the club in my left hand, which helps a great deal. However, even with a round grip (provided it fits properly) you will have a MUCH more secure hold on the club and as a result you will be able to grip the club securely without strangling the darn thing.

Anyone who has a weak left hand MUST keep the wrist flat or the clubface will be wide open. It is also very, very difficult to set the left wrist with a weak left hand. In addition, you CANNOT rotate the left forearm properly in the backswing or the club will have a tendency to lay off with the clubface wide open, which forces you to compensate with your arms in an incorrect manner. The right arm cannot fold properly; the wrists cannot set properly; the shaft lays off; all of these make it tough to get to the top in a fundamentally sound position.

When you are not fundamentally sound at the top of the backswing, you are forced to do something in the transition and downswing to compensate. This is a tough way to play consistently. Most players I have observed in my years of teaching and playing that have a flat left wrist are VERY hot and cold. Sometimes they strike the ball spectacularly, then a few weeks later they are chopping the ball all over the course, with big hooks, duck hooks, and blocks. When they are on they are on; when they are OFF they are REALLY off.

For creating reminders under the grip, the best thing I have found is simple 2 inch wide double stick tape. Simply fold it to 1", then to 1/2", then to 1/4", then even to 1/8th if you want. Looking down on the club so that the face is square and the butt of the shaft is directly below your eye, simply place the tape on the shaft (note: you have already installed a single wrap of 2" around the shaft). The position is key: 5 o'clock for a weak setting; 6 o'clock for a neutral setting; and 7 o'clock for a strong setting. You want to find the correct *feel* for you and it takes some trial and error. An injector gun helps take a grip off and reinstall it in seconds.

I have found that for players to get the exact same *feeling* through the bag, you have to set the driver in a weaker position than the other clubs. I teach all of my students that their hands are ALWAYS in the same position relative to the body no matter the club. From studying thousands of tour players and good ball strikers, I have noticed that almost all of them have the left half of their left hand over the right half of their left thigh at address (from a face on view). Then they simply set up with the appropriate weight distribution, spine tilt, and place the ball in the appropriate position for the club which then changes the angle of the shaft with the clubface square.

So with the driver for instance, as it is played more forward with the hands more behind the shaft as a result of moving the ball forward, the drip reminder needs to be placed in a weaker position than with an iron. I try and take the student's *favorite* club, say a 7-iron, install a reminder based on a *test* grip that they said *feels* good. Then he/she hits some shots with their 7-iron with the taped reminder installed. I can then turn the club weaker or stronger depending on their comments. Once we have this club proper, I then base all the other clubs on that 7 iron. The driver will be set the weakest, with a transition getting stronger through the set.

## Rotating the Forearms

If you watch Chris DiMarco and Mike Weir, they appear to practice trying to *feel* the clubface opening up due to the rotation of the lead forearm on the backswing. It gets the clubface opening up (rotating) and also rotates the shaft onto the correct plane (shallows the shaft angle). Without forearm rotation the clubhead will have a tendency to work up on a steep plane as will the shaft/arms, which would require a pretty serious shallowing of the shaft in the transition to get the shaft on the correct plane before the core can rotate through the shot. If the



shaft does not shallow to the correct plane a pull will result. This is the primary reason you see players who do not have a lot of forearm rotation, Sluman and Sutton come immediately to mind, that play primarily fades. If they do not shallow the shaft enough they can still hit a pull-fade back to the target and nobody knows the better. It is *very* hard for these guys to draw the ball though...only when they are swinging their absolute best.

By allowing the left forearm to rotate in the backswing, it helps set the right arm and clubface *on-plane*. What I term *on-plane* is the left arm, shoulders, and clubface all on the same pane of "glass" at the top of the backswing, or at some point during the transition the arms and club *find* their way to this *on-plane* position.

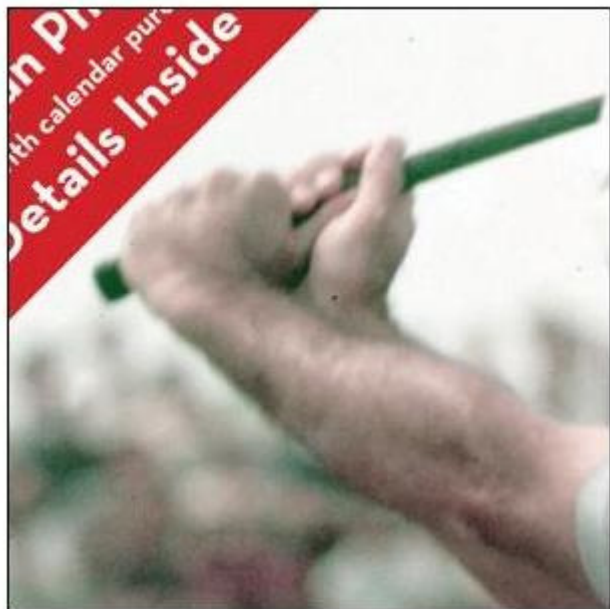
Most of the time when the left arm is breaking down it is due to the left forearm *not* rotating properly. As a result, the club cannot set without some breakdown of the left elbow. It is *much* easier to keep the radius of the left arm if you allow the left forearm to rotate shortly after the backswing begins.

However, there should be ZERO forearm rotation on the downswing. You want to keep the extreme upper left side connected, keep the feeling of width created in the backswing, and let go left as fast as you can with the trunk of the body supplying the power. Provided you are on your left pivot point and NOT hung back or "stuck" on your right side, let go left, fast. If the student is set up correctly at the start and pivots properly in the backswing, they can get stuck or hanging back.

A common *problem* for good players starts with simply taking the club back with too much tension and having the clubface almost hood under on the backswing. The club is not allowed to *open* up, the left forearm does not rotate properly, and the right arm does not *set* properly. Often the cure for this tension is to *feel* the toe rotating open in the takeaway, the left forearm is rotating, and the right arm is *folding* while your core is winding up/pivoting. A *very* simple way to feel the correct action of the arms in the takeaway and backswing is too simply set up normally and then turn your trunk and arms TOWARDS the target until your left arm is at about 3:30. Then swing everything together all the way to the top of your backswing. If you are fairly tension free you will feel the arms swinging in response to the winding core/trunk and the weight of the clubhead will *set* the arms and club. You will arrive at the top together, synchronized.

## Producing and Using Lag

IF a player grips the club properly AND takes everything away together for the first 12 to 18 inches (assuming that posture and alignment are fundamentally sound), the player can then rotate the left forearm while continuing to turn and wind their trunk and shoulders. The wrists will naturally *set* themselves. The longer the left thumb (IF it is placed properly in the lifeline *slot* of the right hand) the more wrist hinge and set the player will achieve at the top of the backswing. IF they fire the lower body and lower trunk properly to initiate the downswing they will create *lag*.



That is what you see in so many powerful players. You will see the shaft *load* during the transition. Properly applied *lag* produces a tremendous amount of power. IF the technique through impact is sound, the clubhead will square up at the last possible second WITHOUT ANY manipulation of the clubhead by the hands and arms. Sergio, Hogan, and Appleby are some fine examples...there are many others.

Having a *cupped* left wrist at the top increases the amount of lag potential. A *truly* flat left wrist *greatly* limits the amount of *set* in the left wrist and, in most cases, eliminates the ability to create any appreciable lag. The shaft *can* load and as a result the *tip* of the shaft and head can lag. However, as for the *angle* and *lever* of the left arm and shaft increasing

(TRUE lag), this is virtually an impossibility with a flat left wrist.

The *left* latissimus dorsi muscle (lat) is stretched in the backswing and the clubhead is *gravity* set *very* late in the backswing as the lower trunk begins the transition. Some resources call this *float loading*. The clubhead is moving in the opposite direction along its arc/circle relative to the core's unwinding/rotation along its arc/circle. For a *short* period of time in the transition they are going in *opposite* directions at the same time. The *mass* of the clubhead moving down and *away* from the target (in relation to its arc/circle) *loads the lever* (left arm, club, and shaft) during the body's transition.

As for releasing lag, the *only* reliable way to *release* lag is to work the butt of the club LEFT through impact, which forces the clubhead back out in front of the core, unloads the lever, and squares the face without *thought*. If you attempt to release lag via the hands and arms you can get serious blocks one minute followed by hooks and snap hooks (reference Bobby Clampett during his later years on tour). This is difficult to *time*. That is why lag is a double edged sword, *great* in the right hands that know how to use it, but a disaster in the hands of a person who does not.

With a rotational release the divot *curves* to the left. You can see it with a short iron out of certain types of grasses. The clubhead swings on an *arc* from inside to back to the inside. The *only* part of a divot that matters is the first two inches. Take a couple of tees and align them with the inside and outside of the first two inches of the divot. That is the direction the clubhead was traveling at, and just after, impact. A lot of teaching professionals (unfortunately), pay too much attention to the direction of the *total* divot.

## The Hands

All the hands do in a fundamentally sound golf swing is hold onto the club.....the hands should be PLACED on the club properly so that they do the following.....

- They acclimate properly to one another
- They acclimate properly to a square clubface
- They are in a position so that the left hand/wrist can *cock* and the right hand/wrist can *hinge*.

With these fundamentals, the right arm can *set* properly in the backswing while maintaining the *length* in the left arm which maintains the radius of your whole golf swing.

In the *old school* golf swing the right hand and arm had to be very active in order to overcome the tremendous amount of torque found in the shafts. Without a conscious release of the right arm and right hand, the clubhead simply would not square up consistently. However, we have not played hickory in over 80 years so that technique was technically outdated some time ago. Only with the introduction of affordable high speed video and MUCH better instruction is it FINALLY going by the wayside...most of this has only been in the past 20 years.

## The Swing Plane

Your spine is NOT straight; therefore, when you turn around a fixed point (I focus on the base of the cervical), the other sections will respond and turn on SLIGHTLY different angles. In other words, it is impossible for *one* section to remain stationary without other sections reacting on different angles.

It is a BAD IDEA to TRULY turn the arms and club on the same plane as the shoulders. Remember that the spine is on a TILT away from the target at address. The amount of TILT varies according to the club, shot, trajectory, and impact desired. If you PIVOT properly (that is, turning with no sliding, what I call turning *deep*) from a correct SET UP the arms would work WAY too inside and around BEHIND the body IF you attempt to keep them *glued* to the

chest (although they WOULD end up on a plane that is virtually the same as the shoulders). You CAN do this and it will work IF you remain WIDE and synched. However, most will not remain wide and synched and they will end up with the club and arms behind their butt, which will REQUIRE some manipulation by the arms in the transition to get them and the club into a position to be delivered in the correct alignment and positioning relative to the core at impact. If you get the club and arms behind your butt and *just let it go* you will never hit it very solid and pretty much the entire *property* is in play. You can miss it in all directions and not hit it very solid. Hence, I teach an armswing that is SLIGHTLY more upright and steeper than the shoulders and core is winding upon. The arms end up on a plane that is SLIGHTLY more upright than the shoulder plane. Hardy might call it a *two-plane*. Regardless, the DOWNswing ends up being a LOT easier, more consistent, and more powerful than a lot of *one-plane* teaching and requires NO manipulation (right arm throw-overs) in transition and is MUCH more true to Mr. Hogan.

## Understanding Hogan's 5 Lessons

There are numerous contradictions in 5 Lessons, as Hogan is describing what he *felt*. Some of his *lessons* are a bit *vague* or hard to understand. It takes several readings before it makes total sense.

For instance, Hogan's plane concept is *far* from wrong, but is just not described well. A lot of people compare Moe Norman and Ben Hogan in their planar swings. Both Hogan and Moe Norman swung the club on *very* similar planes and with clubfaces that reacted very similarly, up to a point just before impact when Moe put the air brakes on his torso and chased the ball down the target line with his arms.

The section on the grip if followed to the letter will result in the player having way too weak a grip. Hogan had a stronger grip than he describes in 5 Lessons. My guess is that he went from a strong grip in "Power Golf" to a more neutral grip in 5 Lessons and it *felt* like the grip he describes there.

I have helped a *ton* of players who are Hogan disciples simply by changing their grip to at least a two-knuckle left hand. If you grip the club strong enough *everything* in 5 Lessons is applicable. With a one-knuckle left hand (which even Hogan did not utilize) as described in the book, all golfers will slice hell from the ball. If you get the grip right, then you can truly smoke it without ever hitting a left to left wrist rocket.

I was one of the lucky ones who actually got to see Mr. Hogan hit balls in 1984 or so at Shady Oaks. He was preparing to go film some ads at Riviera for the Hogan Company. For that reason he was practicing fairly hard for his age. I have also been fortunate to play with many, many outstanding tour players over the years and just about all of them from 40 and up and some of the younger guy's too. Let me tell you the exhibition that man put on with a golf club at 71 + years old was simply incredible. He could barely walk. I was probably 200 yards away and the kid he had shagging didn't move much in any direction other than when Mr. Hogan waved him to move back.

I cannot tell you how much this experience affected me other than to say I immediately went and dug out 5 Lessons again (prior to that I'd given up on it). Along with video footage of him began *really* studying both the footage and the book. It then began to make perfect sense to me.

Hogan and Nick Price are the two players that I have studied the most as they are the two best ball strikers I have ever seen, by far. I got to see Moe Norman hit some balls in Canada and he could really hit it straight, just not very far so he was not really all that impressive...but he was probably in his mid-late 50's too and really out of shape physically. However, Mr. Hogan at 71 with bum legs could hit a golf ball like nobody I had ever seen before or since.

Anyone who actually got to see him hit a golf ball and the incredible "athleticism" ingrained in his golf swing could not help but be almost overwhelmed. And as a ton of the older professionals got to see him play and were in awe of him they created the *mystique* and the subsequent *aura* around 5 Lessons, which is still being passed down today.

The only footage that I am aware of that shows Hogan's grip and has him describing exactly how he gripped it, is of Hogan hitting balls into the Atlantic out of George Coleman's backyard. It was filmed in 1978 and he was 65 years old at the time. His grip clearly is not a one-knuckler, much closer to two. If you watch him place his hands on the club then pause the frame right after he gets both hands on the club you will notice quite an angle between his left forearm and the back of his left hand. This is very close to two-knuckles. If the hands are truly acclimated together, your left hand "V" will run at your right cheek, at your chin, or just inside of the chin with a two-knuckle grip, depending on the size of your hands/grips, etc.

The most interesting thing about the whole video is when he says the hands and arms are "not down or around...just forward."

Hogan had *huge* grips on his clubs and a piece of wire for a reminder that was set fairly weak. One of his last sets of clubs (PC irons and some type of Hogan speed slot driver) was in the tour department at Hogan. When you grip the club with the reminder in the correct position it is very close to a two-knuckler. His driver had probably five or six wraps under it and with the wire felt like a "hoe handle" attached to a piece of rebar. The irons were *very* flat and had been bent to open them up. He was probably the only person on earth who could hit them.

I have still photos of his grip from his prime in the late 40's and its DEFINITELY not a one-knuckler. It is very comparable to many of the guys today. The *angle* between the left forearm/radius bone and the back of the hand is the *tell all*. With a true one-knuckler there is not much of an angle, basically none at all.

Hogan describes in the tape how the club goes "in the fingers," and how "the pressure is in the last three fingers of the left hand and the middle two fingers of the right hand."

## Swing Keys for the Modern Golfswing

- "Let your head move"
- "Hold the set of the right knee"
- "Turn the *right* shoulder backwards"
- "Turn into your right leg/thigh"
- "Turn into the set of your right leg"
- "Keep the upper arms connected"
- "Keep the *arms and chest* in synch"
- "Clear the left side"
- "Hold the angle of the right wrist"
- "Hold the angle of the right arm"
- "Hold the angle of the back of the left hand and wrist"
- "Turn everything through together"
- "Swing Left"
- "Pull the heel"
- "Do not let the toe pass the heel"
- "Finish left and level"

## Common Backswing Problems

1. When your shoulder turn ends your club and arms keep going.

Film your swing and then watch it back in frame advance, focusing on the left shoulder. When backswing pivot is over, count the number of frames that the arms and club keep going. One to three frames at a 4000 shutter speed is not that big of a deal (if the clubshaft/clubface and arms are on a decent plane, the player

will usually fight *wiping* the ball on occasion, but overall will strike the ball well). If more than three frames are out of synch then there is a bigger the problem. If for instance your arms *run-off* for 10 frames then you have a 10 frame *gap* between your core and your arms and club. The club is now *trapped* behind the body and core. Somehow, you have to then regain these *frames* in the downswing and get the arms back out in front and in synch with the torso at impact. There are several different ways to regain the *frames*, but all of them require great *timing*. You also may lose a considerable amount of power.

2. When your arms disconnect immediately in the backswing and then react by sucking the shaft, arms, and club back to the inside OR you simply hug the right elbow to the right side and suck the club and arms too far inside, too quickly.

In the case of a lot of good players, they lift the arms and club on too steep a path in the backswing and then drive the lower body excessively, thereby re-routing the arms and club back too much to the inside. Regardless, the problem starts with the first 12 to 18 inches of the backswing. The result is an inconsistent backswing requiring compensations in the transition and downswing to strike the ball properly. The cure for this problem is to ingrain *width* in the backswing through the *width* of the left arm/clubhead swinging relative to the core. By taking the clubhead more down the line the first 12 to 18 inches of the takeaway while your torso winds *backwards*, the left arm feels like its tracking more down the line, the toe of the clubhead feels like its staying on the target line longer (the clubhead stays outside the hands), and the trunk and core winds up to a *deep* turn/pivot. The result: the core is really wound up into the right side.

## Emergency Hooking Help

Odds are that if you have the snap hooks, you are attacking the ball from too far inside the target line with too weak a grip which requires you to manipulate the clubhead with your hands to square the face at impact. Generally it would also follow that your arms and club are out of synch with the trunk in the backswing (that is, the club and arms continue on or *run-off* when your backswing trunk rotation has been completed). Ideally you want the arms and club to stop at the same instant that the shoulder rotations stops in the backswing, where they are *in synch*. When the arms and club continue after the shoulders and torso have completed their backswing turn or windup then the arms get behind the trunk. Specifically, the right elbow gets *way* too close to the body or, in a worst case scenario, behind the body; the left arm breaks down at the elbow in which case the arc that the clubhead is following collapses, etc. When these things occur it will be necessary for your arms, club, and hands to make up the *gap* in the downswing to square the face at impact. In other words if your arms and club continue on for 10 *frames* after your shoulders have completed the backswing turn (as viewed from video footage) then you have a 10 frame *gap* (you are 10 frames *out of synch*). This *gap* must be made up in the downswing or by compensating with either an excessively strong grip or excessive hand action through impact. Remember that a compensating move is nothing more than an error for an error, which is very difficult to time and always inconsistent.

There is any number of techniques, drills, and feels to eliminate, or at least reduce, a hook. Try the following until you find one that works for you...

- Increase the grip tension in the last 3 fingers of your left hand (assuming that you are right handed). You want to *feel* as if the vast amount of your grip pressure is located in these 3 fingers. Make SURE that the club is being gripped in the fingers of the left hand and NOT in the palm. If your grip is too weak, you are generally dead on arrival.
- Speed up the rotation of your torso to the left in the downswing, *clearing out* the left side. Using an Impact Bag is VERY good at ingraining the feeling of clearing the left side while hitting with the right side, with passive hands and arms.
- Try the hooded face drill. Set up normally with a 6 or 7 iron, except the face of the club is closed, up to 45 degrees. Make sure your grip is normal just as if the clubface were square; then try and hit shots straight

from this exaggerated closed clubface position. When you can do it you will be trapping the ball against the turf from a highly *leveraged* position. In order to hit straight shots from this closed clubface position your arms must be connected and in synch with your torso and the torso must be clearing and rotating left with tremendous speed, which are ALL attributes found in powerful golfswings.

- You can try the image of the toe of the club never catching the heel. In other words the heel of the club is leading the toe at impact. A great drill using this image is to place a glove or towel under your left armpit (way up in the pit), then try and hit *punch* 7-irons with the image of the toe never catching the heel.
- A drill I use quite often with my students who come to far from the inside on the downswing is the *box* drill. Take an old golf club shipping box and set it down on the ground parallel to the target line and approximately 6" or so inside the target line (between your toes and the target line). I then try and get the student (once they are set up on the correct address angles) to feel as if their right shoulder and hip are turning "backwards" (maintain the flex in your right knee) while the clubhead is working down the target line for the first 12" to 18." Then the left forearm begins to rotate and the right arm/elbow begins to fold opening the face and setting the shaft. The key is that at NO time during the backswing should the arms be working independently of the torso; they work together. When the torso completes its backward *turn and wind* then the hands, arms, and club stop at EXACTLY the same moment; everything is *in synch*. Hit a lot of wedges short distances to get use to the feeling of synchronization. The student then tries to hit shots with their driver without hitting the box and while trying to hit a fade or pull. They THINK they are going to pull or fade the ball but they rarely do in actuality. Usually their ball flight straightens out and they learn to quite the hands and forearm rotation.
- Another *image* you can try is the feeling of *pulling* the handle or butt of the club to the left with your left side through impact. This is a tricky drill that I usually use only with tour players or excellent players, but it works like a charm with them to eliminate hooking.
- Finally, you could also try placing lead tape on the toe of your driver. You'd be surprised what 3 or 4 strips of lead will do to temper the rotation of the clubhead through impact. I set up all of my good players' drivers this way with at least D-4 up to E-0. Set the driver up anti-hook so that they can rotate their bodies as hard as they want without the clubhead "over-releasing." It depends on the characteristics of the shaft and your swing as to how much tape to apply.

## Why You Cannot Fade a Ball to Save Your Life

First off, you are most likely attacking the ball from way too far from the inside. For certain, the clubhead is traveling on a path that is too far from the inside and most likely your arms are too. They usually work together, but *not* always. I have seen good players who had their arms in perfect position, but, as their shaft was too laid-off, only the clubhead attacked from too far inside. This is fairly rare, but does happen with good players.

There are many reasons for a path and *arc* that is too far inside the target line on the downswing:

- Your arms may *run off* behind the trunk and torso in the backswing. As a result the arms are *behind* the body at the top and cannot catch up in the downswing without some type of compensation or manipulation.
- Your arms get *sucked* behind the body in the backswing. Good players will then have their arms attacking from too far inside the target line, poor players will usually either re-route the club *over the top* or *cast* the clubhead from the top for all their worth.
- You *roll* the clubhead inside by initiating the backswing with your hands and leaving the arms and the trunk and core behind.

- You *suck* the arms inside when you initiate the backswing.
- You habitually re-route the arms *underneath* your plane in the transition (a good player habit).

Sometimes the culprit is not the path and arc, but the clubhead's relationship to their particular path. The clubhead's relationship to the arc and path is the *key* element (provided the arc/path is fundamentally sound) in determining whether the player can square the face without manipulation with the hands.

For instance, Paul Azinger, Lee Trevino, and David Duval *all* three attacked the ball from an extremely *inside path* relative to their body and the target line. However, because they had overly strong grips, the clubhead could still square up at impact without manipulation. Some teachers would say that "one error compensated for another," but it happens all the time with some very good players and ball strikers.

All that the golf ball knows is the path and arc is fairly well related to the target line, the arms and shaft are in a *leveraged* position at impact, and the clubface squares up. One will never be able to strike the ball from a leveraged and powerful position if the clubface cannot square up by itself. You will always have to throw away the *lever* (that is, get *handsy*) to square the face. The result is shots that lack real *character* and are inconsistent.

Another VERY common reason for the *feeling* of getting *handsy* through impact is the following: too weak a grip resulting in an open clubface position at the top. MANY times I have seen players who had their arms and club in a pretty good position, but as the clubhead was in a weak position it could NOT be squared up at impact, even from a decent path, without manipulation with the hands.

Another common problem with good players that results in a *handsy* downswing is simply letting the arms *chase* down the line rather than work with the body to the left and back to the inside in the impact zone and throughswing. As a result, the left arm cannot fold so the clubhead cannot release properly which then requires the player to manipulate the clubhead with the hands. To test and fix this problem, you can stick a glove *way* up under your LEFT armpit and hit 3/4 seven-irons making sure to not let the glove fall out. If the club seems to want to square up more easily then this could well be the entire problem.

One other cause is simply getting the upper body *ahead* of the ball in the downswing. When this happens, the arc gets very *narrow* and the clubhead does not have enough *room, time, or space* to square up on its own. To counteract this, you have to slow the torso in the downswing and *panic flip* with the hands.

## The Shut Face Drill

One of the best drills for a player with reasonable fundamentals and pivot is the *shut face* drill. Take a seven-iron, set up normally except that you have shut the face a bit. Make three-quarter swings and try to hit the ball straight or with a slight fade. In order to do so you must create some lag and delay the clubhead which keeps the face open a bit longer and also forces the player to work the butt of the club left with his body. When you can successfully hit the ball straight (perhaps with a slight draw or fade), you will see on video from a face-on-view that any *flip* release is gone. From a down-the-line view, you will see the butt of the club work left with your body and the club release left (similar to Hogan, Snead, Price, etc.) For casters and flippers there is *no* way to hit the ball straight if you manipulate the face with a handsy release. It is important to *not* make full swings with the drill. However, you can hit the ball hard once you get the hang of it. This is also a *great* way to hit a wind shot to learn. Simply do not close the face as much at address, but swing the same way. This will keep the ball down and the flight boring and straight through the wind.

After mastering the low and left release (and the shut face drill), the player can also do the *open face drill*. The drill is similar to the description above, but with a substantially *open* face at address. What this forces is for the players to either really flip it or they must really work the butt of the club hard and left to keep from slicing the ball. When a player can successfully hit powerful straight shots with this drill (releasing hard left, not flipping) they really look like Hogan or Price from down the line.

## Spinning Out

Anytime a player does not reach their left pivot point (left leg) its considered a spin out. When a spin out of the hips occurs only four things can happen: (1) if the clubface releases = pull hook, (2) if the clubface is square to the path = pull, (3) if the clubface is square to the target = pull fade, and (3) if the clubface is open to the target = wipe fade. Evidence of a spin out is your divots would be steeper than normal and they should be aiming left of your norm. If this is true then you have the classic spinout. Usually when I see a good player who has gotten into spinning out it is caused from very poor posture. In particular the *tilt* of the spine at address combined with poor address weight distribution. At address you should see that a line straight up from the out-step of the left foot (for right handers) should touch your left hip and then your left shoulder, and the shoulder is no further away from the line than 1". If you do this then your spine is slightly tilted away from the target, which is perfect, but, your weight will favor your left leg slightly. This set up is conducive for a number of things, but, most importantly you are now set up to *trap* down on the ball from the INSIDE. This set-up will aid you tremendously in both turning into your right leg and right side as well as the proper winding and turning of the trunk and shoulders. The result: you will find yourself wound up BEHIND the ball into your right side, but you will not have nine miles to go to get to your left side during the transition. Also as a result, the EXACT same transition move that is currently spinning you out WILL get you to your left side. Because you have turned *deeper* in the backswing the club and arms will be traveling on a much better path. The steep divots go away instantly as do the *crooked* divots. You then should note that the ball is back in the center like it should be.

[from Hoganfan:]Here is some more information to *solve another Hogan riddle*. Remember when he says in 5 Lessons that in the downswing you "Can't rotate the hips too fast?" How many people has that screwed up? While I believe that Hogan was being 100 percent genuine in that statement, he left out some key prerequisites to being able to do that successfully, here they are:

- You must have the vast majority of your weight on you left foot (I'd estimate at least 80 percent) when you either start that fast *hip rotation* or get the weight there very early in that rotation, or you will end up with a *hang-back, spin-out*.
- You must use the core muscles, not leg drive, to create that pelvic rotation. Again, hang-back, spin-out will likely result if you use leg drive. The legs support.
- Your arm swing must be *in synch* with your shoulder rotation in the backswing and your arm swing cannot be overly long (or you will likely hit wipes and pulls).
- You have to do it by *clearing the left hip and left side* not by driving the right hip toward the ball. It must be a left side pulling, not a right side pushing action; just like Hogan showed with the *elastic band* image in the book. For the better player with already quick hips, it helps to imagine that elastic band is attached all the way from the left shoulder down to the left hip. Do it with the right side and you give up a lot of power, and are more likely to cast and more likely to shank.

## Getting Stuck and Blocking

SOMETIMES a *rounded* backswing can lead to arms that are too far *inside* and *behind* the body. When this happens it is easy to end up *dragging* the arms and club from too far *inside* and behind the body in the transition and downswing. When this happens, the tendency is for the arms to want to work too much from *behind and inside*, leading to the butt of the club working down the line and away from the body. Now you are BLOCKED and will have to manipulate the club in order to square the face through impact. There ARE several ways to accomplish squaring the face from this scenario, but, they are ALL *compensations* for a backswing error and will have to be *timed* well to work with reasonable consistency.



A lot of players with out-to-in tendencies are more than likely swinging that way NOT because they are *coming over the top*, but because their arms and club are attacking from *too steep* of an angle of attack for THEIR SWING. As a result their clubface is *shut*, making the club release with overactive arms and hands. All of these flaws are reasonably easy fixes with proper supervision and direction.

A *down and under* right side, which happens in the transition, is NOT NECESSARY if the player has PIVOTED correctly and has their arms and shaft in a reasonable position relative to the pivot, torso, and core and the clubface is square to SLIGHTLY open. Dropping the right shoulder is a compensation for one or all of the following problems: shut clubface, steep arms and shaft, and right pivot point too far from the left at the top. With that being said, *dropping a bit down and under* in the transition is a WONDERFUL *timing move* with the only negatives being that the player will have a tendency to work a bit more down the line (which can cause pulls and wipes) and can lead to the player getting *stuck* too much on their right side in the throughswing and finish (think Bob Gilder). If you have a tendency to get steep and/or shut, this move can be a lifesaver and THE KEY to your golf swing.

## Curing the Weak Push

- Make sure your grip is correct;
- Make sure the face is square;
- Make sure your ball position is center to back of center;
- Make sure your weight favors the left side: 60/40 for a full shot, 70/30 for a pitch;
- Make sure your alignment is square to slightly open (especially your stance);
- Stick a glove underneath your left armpit;
- Make sure that you are NOT throwing the clubhead on the downswing; and
- Hold the *angle* (hinge) in your right wrist and turn through the ball hitting down and trapping the ball between the clubface and turf.

If you do all these, I guarantee that you will not be hitting them weak and right.

## Releasing too Far Underneath

If you get too *underneath* at impact (often characterized by heel hits), a remedy is to stick an old glove way up in your left armpit (assuming you are right handed) and not under the bicep. If the heel hits do not immediately disappear with normal shots, then hit some *chip* drivers, with the glove under your left arm making sure that you finish more on top of and around your left leg...the glove remaining under your armpit. This should help the heel hits immediately disappear. It helps to picture Justin Leonard swinging as that is what the drill will *feel* like). *Chip* drives should travel 180 - 200 yards and might fade at first, but, keep doing it until you can hit the ball basically dead straight and solid...once that is accomplished simply BUST it and let the glove fall out in the finish. When the arms are being delivered from slightly behind or too far from the inside they have a tendency to want to work out or away from your body through impact. By sticking a glove under your arms (especially the Left arm for a right hander) your arms will work more left with the body during impact and the through swing.

Norman was a very good ballstriker, right up there with the best drivers of the ball in history. Notably, Nicklaus recently picked Hogan as the best driver he ever saw in one of the magazines. The problem for Norman was that he was way *underneath* in his seminal years. He still is today only not as badly. When a player gets that far underneath they MUST release the club away from the body with their arms, which can result in BIG blocks on

occasion. In my opinion, Norman did not *choke* so much as his golf swing had a fairly serious flaw that was constantly showing up at the most inopportune times. This resulted in a *lack of confidence* in his ballstriking, negative thoughts; *Gremlin's* creeping into his brain right when he needed to be supremely confident. Norman was an amazing talent, good enough at one time to ALWAYS be in contention, but, just not QUITE good enough to dominate like he certainly could have. He was ALWAYS *right there*, time after time, and won his share. However, two British Opens is far less than he should have won, in my opinion.

## Arms Getting Too Far Behind and Too Steep

When a student has the arms too steep at the top of the backswing or they have the arms BEHIND the body at the top, the club will be behind them and out of synch if the player does not recover this *gap*. While the body may be in good position to hit the ball, the club and arms are behind. When the ball is actually struck the body is 3 frames *ahead*, or too open...too far gone. I use the term frames to characterize how the arms continue in the backswing AFTER the trunk turn has been completed. By simply counting the number of frames that the arms continue, this gives an idea of the size of the *gap*. If there is a significant gap, this gap MUST be recovered in the downswing in order to hit the ball flush with the proper path and angle of attack.

If the arms are too steep (even if they are in synch), and the player attempts to rotate the trunk properly, the arms will be attacking on too steep of a path. Consequently, the player will *feel* "over the top" and pulls, pull hooks, and pull fades will occur. The shots will feel fairly solid to very solid but the flight will start left of their body lines.

You can play from *in-synch* with steep arms IF you drop the arms onto the correct plane and path in the transition. Furyk, Cal Peete, and older Nick Price are examples of swings that do this. There have been a TON of guys that play successfully this way, as the *drop* is what they *time* their entire swing upon.

While it may not feel this way, what actual good ballstrikers do is allow the arms to get in front of the chest on the downswing so that everything can be released together. What I tell students who get their arms too steep and too far behind their trunk is the following: I want them to feel like they are hitting the ball with the actual loft of the clubface, or they should feel like when they actually strike the ball that the shaft is vertical instead of leaning towards the target.

## Planing the Shaft at Impact

Almost all GREAT BALLSTRIKERS and iron players that I have observed and studied have returned the arms and shaft fairly close (some such as Hogan and Price are DEAD on) to the same angles they had at set up due to their being MUCH more *on top* and *clearing left* with an iron at impact in order to strike the ball while the clubhead's ARC is still moving down. A LOT has to do with the player's angles at address or with their individual *armswing* in the backswing. Some pretty good player's arms and shaft are unreturnable or *unplaneable* if a fundamentally sound pivot and armswing is created during their swing motion. This is due to their exaggerated arm and shaft angles at address. Zoeller's *low* hands and arms are an example. Also, almost ALL *inside-out slingers* will arrive back at impact with their arms and shaft above their original address due to their spines and upper body *backing out* during the swing so as to drop the arms and club to the inside.

Almost all good players will not *plane* a driver at impact as the club is attacking from a more inside and shallower angle than with an iron. The player is more underneath and *behind* than with an iron so as to strike the ball as the clubhead's arc bottoms out or *slightly* on the upswing.

What I have learned over the years is that *planing* the shaft is not all that important. It is MUCH more important that the shaft's angle at impact work its way through the mid-section somewhere around belt buckle high and that the arms, hands, and club *disappear* reasonably close to waist high (after impact in a down-the-line view).

This is true with ALL clubs. This tells me that the arms and club are working *with* and *around* the body as they *react* to the rotating core, trunk, and torso.

## What Really Causes the Shanks

Shanks can be caused by either a swing that is too much *inside-out* or a swing path that is too much *outside-in*. The commonality is that with each swing, the arms *run off* and get behind the body.

*Rarely* is a shank or *heel* hit caused by standing too close to the ball. In fact, the *opposite* is usually the case. The student stands too far from the ball and the club and arms work too far inside and behind the body resulting in a swing path that is too much from inside and/or an armswing that is too much from the inside, or both...the arms are working from behind the body.

When the arms are working too much from the inside on the downswing not only will a path too much from the inside be the result, but the *momentum* of the club and arms working away from the body will quite often *pull* the weight onto the players *toes*...shank/heel hits result.

With some "good players", they *re-route* the arms and club in the transition to shallow the plane. Once in a while they will overdue the *re-route* and the club and arms work too much from the inside when they are not *timing* their swing as well. Shank will result sometimes and heel hits will be the rule.

## Getting Up On the Toes

In my experience, when a student goes to his toes in the downswing it is usually because they are too much on their HEELS at address or the student is setting up like the Hunchback of Notre Dame and, as a result, is required to stand up during the backswing in order to get the lumbar and thoracic sections of their spine in line in order to make a turn. If you stand up in the downswing you will need to tilt over in the downswing. When this happens the weight moves from the heels to the toes and as a result the golf club works "over the top" and a pull slice results. However, with a good player, they will work the arms in such a manner that allows them to reach the ball even though they are standing slightly taller than they were at address. VJ Singh and Mickelson are two examples of good players who both stand up during the backswing and then sling their arms from the inside with quite a bit of hand action to release the club. Both of them have the same problem of the *top* hand coming almost completely off of the club at impact (VJ's right and Mickelson's left). They sometimes hit some very wild shots, usually 2 or 3 a tournament when they are playing well...more when they are not playing well.

## How to Hit it Farther

If most golfers try to hit the ball hard, all they end up doing is pull a muscle, scar the crown of their driver, and lose a bunch of golf balls. In order to hit a golf ball as far as the golfer is capable of, there are 3 things required: 1) proper path and angle of attack; 2) solid contact with a *supported* blow, and 3) clubhead speed.

It is FAR, FAR more important to get the *first 2 first* (first things first) and THEN work on developing maximum clubhead speed. Speed with an oblique hit on a bad angle of attack and path simply hits the ball a little bit further into the junk. Once you have worked on the first two keys, here are ways to increase speed:

- Clubhead speed comes from core/arm speed so you can strengthen your core (abs, obliques, latissimus dorsi's) with medicine ball drills, etc.
- Get your swing checked out on a swing monitor, then experiment with different golf balls. You might not be playing the best ball for your impact characteristics, and/or you WILL need to invest in a new

driver that is more suitable for your swing. Most people will need to break down and get the appropriate driver, shaft, and ball combo.

- Swing a HEAVY driver, HARD, at least 50 times per day. You can break it up into 5 sets of 10, but do it. Then turn around and swing just a long driver shaft (50" or so...a 46" shaft with a 4" extension in it...a piece of PVC will do) with no head on it. Make it swoosh as hard as you can...do the 2 in combination.
- Strengthen your forearms and wrists so that you can strike the ball more solidly with a *heavy blow*, meaning that when the clubhead strikes the ball its being supported with a *superstructure* (arms, wrists, and chest) that is *solid*. Some players hit it a long ways not so much due to alarmingly high clubhead speed, but, because they hit it so solid.
- You can tee it higher and play the ball slightly more forward so that your launch angle is higher. But, you might already be doing this, and it could wind up hurting your drives.

## How to Become a Great Driver

Great drivers do several things, most of which are ingrained on the practice tee:

KNOW where the trouble is, then set up and play a shot in a way to best avoid the trouble.

- If trouble is left then line up on the left side of the box to get the best angle, hitting a shot that can either start on a line away from trouble or *moves* away from trouble.
- Set up to play a club that cannot reach distant trouble, but leaves a reasonable second shot.
- Pick a *fine* target such as tree in the distance, the edge of a bunker, a mound, etc.
- Play a shot you are *comfortable* playing and not something you have not practiced a *lot*.
- "Make the wind your friend." *Use* the wind to your advantage if you have the skill to do so.
- Take your time! *Visualize* the shot that you are going to play and see it *clear as crystal*.
- *Feel* the swing and impact necessary to create the shot you *see* in your mind.
- Step up, *execute* the shot, and be prepared to live with whatever the result.

Great drivers *free wheel* it. They simply let it go and do not try to *guide* it. If you are going to hit it into trouble, at least do it with *authority*.

Always maintain good balance. Swing as aggressively as you can while maintaining your balance

Make *sure* the driver you are using is *fit* to *your* golf swing and game.

Always remember that *everyone* hits bad drives...EVERYONE. Sometimes, a bad drive just gives you an excuse to make a great second shot. A par is a par *no matter* where you made it from...the rough, the trees, a bunker, etc.

## The Baseball Swing Drill to Increase Core Speed

The *baseball drill* helps players who do not finish their swing after impact. You simply set up with your driver per normal and then, without changing the relationship of your arms to your body, *raise* your entire core and arms as a unit until the shaft is essentially level. Wind up so that at the *top* your left arm, the shaft, and the clubface all will be shoulder height and the left arm will feel wide and away from your right shoulder. Simply unwind and make attempt to *swoosh* the swing. It is important to *stick* the finish posted up around and on/over your left leg. Do this over and over until you *feel* the *speed* coming from the *inside-out*. The faster the core rotates the more *swoosh* you will hear.

Lower the plane until the clubhead is 45 degrees to both the ground and level (horizontal). Repeat a series of aggressive swings. Now repeat with the club in the address position. You will find that as you bend over it gets a bit harder to really take the aggressive swing, but if you keep doing it you can get it. Stick a ball on a tee and make the same *swing* as if the ball was *not* there...repeat. When you *can* hit it SOLID then you can start to analyze the *flight* and go from there to straighten it out, get more height, etc.

Practice this drill for fifty swings a day for two weeks and you will notice a significant increase in core and, as a result, clubhead speed.

## The Driven Wedge (Practical Use of the 9:00 to 3:00 Drill)

A mid to low DRIVING wedge shot will hit, bounce, and then check on a dime into an *accepting* green.

Position the ball back of center, close to the right instep. Open your body, especially the stance and lower body.

Open the clubface *slightly* to the target (you can open it more if you want to create cut-spin check); this is *very* important. A square face will check and release some. A closed face will check and really release. These are good variations on the shot, but the key is controlling release.

Set your weight 80 to 90 percent on the left side; and it stays there in the swing. There is NO weight *transfer* in this swing.

Tilt the spine and upper body slightly *away* from the target. The left leg is angled towards the target, thereby indicating the weight is left, and the spine will be vertical or close to vertical.

The core, arms, and club work away together. The left forearm rotates to set the club, shallow the shaft, and open the face. The left arm rarely travels any further than 9 O'CLOCK and the shaft is set at least 90 degrees to the left forearm (the "L" position).

On the downswing and through, the left side rotates HARD left, *pulling* the core left. The angles of the arms that were set at the *top* remain constant and the *butt* of the club works DOWN and then *left*. You will more than likely *feel* it in the legs, knees, hips, and lower trunk. Venturi described the feeling as "hitting with the knees." There will be a very well defined *pulling feeling*.

The strike is a definite *trap* down against the turf *compressing* the ball into the turf. For a really quick hop-check, open the face a little bit more at address. To hit it higher, simply move the ball more forward.

The clubhead travels low and left immediately with the body after impact; the angle and set of the right wrist set at the *top* is retained well into the through swing.

Once you have the basic technique down you can experiment by taking the club more down the line, with less forearm rotation, by taking the club outside or inside, by opening and closing the face, by moving the ball back and forward, from tight lies, from fluffy lies, from hardpan...you are only limited by your *imagination*. A LOT of varied shot shapes, spins, and trajectories can be *dialed* in at address and by taking the club back in differing directions. This is a great practice staple for REALLY helping the player to ingrain *feel and touch* with the wedges.

## The Soft Floater Wedge

This is a shot that takes the correct wedge and a *lot* of practice, but once you get it down it is very reliable and easy to hit. This is a shot that I believe all good players must have in their arsenal.

In order to hit a high, floating wedge from a variety of turfs, it is important to have very little bounce in the heel of your wedge. I like to grind all of mine to have *negative* bounce in the heel (so as to lay it open and *not* blade it),

which allows you to *slide* the blade under the ball off of TIGHT turf. For a lob wedge, six to 8 degrees of bounce in the center allows the wedge to still work reasonably out of the sand, and zero bounce on the toe and heel allow you to hit various specialty shots.

Next it is important to set up properly to hit the soft *floater* wedge. You have to *sit back* on your haunches a little bit (similar to a bunker shot), open up a bit, play the ball SLIGHTLY forward of center, and set the face at the target or slightly open to it. The better your bounce is ground the more you can do this. For a thirty to fifty yard lob wedge *floater* you should not have to open up all that much. Then the correct *pace* of swing is all you need from there. I try and make what feels like a *slow motion* full swing. If I take it back at "2 mph," then I try and bring it through at "2.1 mph." This is obvious exaggeration, but in other words it is a very slow and deliberate backswing with a very slight acceleration.

Another way to hit a high soft wedge is to *feel* like you do not have any *wristcock*. *Feel* like the club is simply an extension of your left arm. When you see it on video you *will* have full wrist cock, but it will not feel like it. Simply rotate through the shot like normal. The ball should jump up in the air and *float* a bit more. What you are actually doing is keeping a very *wide* ARC on the backswing so that you will have a *very* wide ARC on the way down and through. The result is that you strike the ball with more of the true *loft* on the club instead of de-lofting and trapping the ball.

## Inspiration for Teaching Props

Leadbetter and Ben Doyle have REALLY influenced me in that regards, as I have done the same thing since that day. I find that it works well IF the student will do the drills with the prop and take it SERIOUSLY.

ANY teacher that is any good will use things like *impact bags*, sawed off *mops and brooms*, PVC, baseball bats and tennis rackets...ANYTHING that will allow *you* to understand the *feel* of a proper golf swing motion utilizing something that you are familiar with and in a manner that is *very* simple to understand.

You can train a beginner to use their hands and arms properly without clogging their brain with theories that, once they become proficient, will have to be discarded. Teaching props help to train people how to create speed properly and feel proper paths. The right drills can help you learn to let *physics* rather than a conscious use of the arms/hands create your armspeed. Once you get a person *flipping* or squaring the club with their hands its *not* as easy to get rid of for the average guy as one might think. Accomplished player can eliminate it within a few weeks, but the average joe, perhaps not in a lifetime.

## The Extended Shaft: Compression Aid

Get a seven- or eight-iron that you like. Take a box cutter and core out a 1/2" hole in the cap of the grip. Get an old shaft, preferably graphite (light) and cut it a little bit at a time until about 4" to 5" inches fits SNUG in the iron shaft.

Open your set-up enough so that you can place the shaft against your left side at address. Hit shots without the shaft slapping the heck out of your left side. I can hit them about 130 yards in the air like this, but most will need to start by simply hitting them 20 to 30 yards. This makes a GREAT chipping and pitching drill that will give you the *feeling* of catching the ball FIRST. There is no way that your hands can break down. I must add a *disclaimer* to this drill. If you already are hanging back on your right side and your left side is blocking out the proper release of the right side through the shot, then the drill will not work until you start out with what feels like 80 percent of your weight on your left side at address. You want to make sure that your left hip and leg are *leaning* towards the target to get your weight set on your left side and that your upper body is leaning just slightly AWAY from the target. Your head will be *behind the ball*. Then hit some shots and you will be able to take a divot. If you try to do this without set up changes you will top and blade most of them.

Next, set up a small bench about 3' or 4' feet in front of the golf ball and hit shots UNDER the bench. When you get the hang of it simply remove the shaft and square up your alignment. You can then bust them under the bench without aid. This seems to work every single time IF you are set up properly, and you have grooved the extended shaft drill.

## Ace Bandage: Keeping the Arms Together

Take something with a lot of elasticity and wrap it around your forearms, elbows, and upper arms. I use 4" by 5" lengths of ACE bandage on the extreme UPPER arms, both arms. I find that this works better than the *swing jacket* or the *swing link*, especially for hitting short shots. There is no better way to keep the arms synchronized with the trunk and core. I have seen guys take a belt and tie their arms together, which I believe is waste of time, as well as taking a chance of really hurting themselves. They say that Hogan used to hit balls with a belt strapping his upper arms together at the bicep, but this is probably just another Hogan *legend* as he certainly did not set up with his arms *tied together* like is described in 5 lessons...he just THOUGHT that he did.

## Neoprene Knee Brace: Cure a Straight Right Leg

If you look at down-the-line views of both Hogan and Snead, you will notice that they made no attempt to restrict the hips in the backswing. In fact, they turned their entire body away from the target and their entire body through the ball. I teach all of my students that as long as they are set up on the correct angles and maintain the flex in the right leg, they cannot wind up too much in the backswing. The key is maintaining the flex in the right leg, if you lose the flex you will then *over-rotate* and all hell breaks loose.

A cure for this over-rotation is to use a neoprene knee brace. They cost about \$20 or so at most drug stores. They have a hole which the kneecap sticks through and use Velcro to tighten them. You set the kneecap in the hole and set the flex in your leg/knee. Then wrap the brace around the leg and Velcro it shut tight. Hit balls with the brace on your right leg until you get use to the *feeling* of not allowing the right leg/knee to straighten. Then take it off and see if you can maintain the flex. Usually works like a charm. You will be walking like Festus on Gunsmoke with the brace on, but, with repeated use you will stop losing the flex in the right leg and over-rotating.

## Using a Swing Guide in the 9:00 to 3:00 drill

One of my favorite drills is to take a Swing Guide (a small yellow plastic apparatus that attaches to the grip). Attach the guide to the grip and swing the club back in a half backswing so that the *guide* rests on the LEFT forearm. Hit pitches holding the guide on the forearm as long as you can and into a short follow through. The in the backswing, the left arm will go to 9 o'clock, and in the follow-through the right arm will finish at roughly 3 o'clock. Perform this until you can trap the ball against the turf and hit it solid.

You must make sure the Swing Guide is *set* on the correct angle so that it rests on your *left* forearm properly at the conclusion of the backswing. If you are looking down at the butt of the grip you need to angle the Swing Guide to about 1 o'clock, depending on the strength of your grip.

## Brooms and Mops as Teaching Aids

A sawed off broom is as good a teaching aid as any. An aluminum handled broom works best. Cut it to length, fill it with sand, epoxy in a plug, and create some form of grip on the handle.

If you leave it full length it is very similar to the *Speed Stick* but it also has the broom head to mimic the clubface. You can then use the broom head to ingrain getting the face/shaft/and left forearm on the same plane. It helps one learn to allow the club to square itself, which teaches the proper use of the forearms and the left arm folding. A lot of plane and arc faults can immediately be detected with a broom that might never be caught with a club. This is because the broom head is much larger, but still represents whether the *clubhead* is square, open, or shut very well.

## How to Use a Video Camera

I use 4 primary positions with 2 alternate positions.

Primaries:

- Face On -- 90deg to the target line and in front of the hands/arms
- Down the Line -- Target line and *Down the Line*, Body/Toe Line
- Rear View -- The opposite of face on (this is great for seeing body angles in the set up and backswing)
- Overhead -- The *most* important view to analyze the *pivot*.

These views tell the *story* of a players golf swing.

Alternates:

- Target Line -- place a camera on a short tripod *directly* on the target line, 10 yards down range. The player hit shots directly over the camera. This is a great view to see what is going on with the *core* and the player's retention of address *angles* throughout the swing.
- 45 deg angle -- Similar to Target Line view only at 45 degree angles to Face On.

If a teacher takes these six angles and then uses them via software to analyze and then diagnose (using comparison video of great ballstrickers), it is easy for the student to *see* with their own eyes their swing problems. It helps them understand the necessary corrections. The teacher can then record a disc for the student to review at home at their leisure. It is incredibly helpful to the student. As time goes by, additional footage is added to show the student how their golf swing is improving. I have witnessed some *incredible* transformations over a few months time period...and the student does too!

## MORAD and Stack & Tilt: Spine Angles

I have seen video of Mac O'Grady (MORAD) at work and if you follow his advice to the letter most will wipe or pull, pull hook all hell from it (which, by the way, is what Snead did when he was playing poorly...in fact, when he played well he was pull fading as his *stock shot*).

Mac's golf swing now is a poor representation of how he swung in his prime, in the 80's and early 90's (when he *made his name*). Due to the *eccentricities* of his set up nowadays, both his own set up and what he teaches, a player WILL have a hard time getting the ball up in the air with a *left swinging* release (called a *CP release* in MORAD terms) with anything beyond a short iron and will in turn fight pulls, wipes, and a handsy release when swinging poorly.

A player can easily hit the ball up in the air with ANY club in the bag using a *left swinging* release (*cp release*) if they SET-UP in a more fundamentally sound manner by widening the ARC a bit at the top; shortening, widening, and synching the arms a bit better (in TGM terms: release p1 & p2 earlier in the backswing); and/or open the face up a bit going back and strike it from a bit less "on top" than MORAD teachings.



Very few great ballstrickers have adhered to or are adhering to the core principles of MORAD / S&T. They are valid methods, but they have some pretty serious *holes*.

My primary "difficulty" with MORAD methods is this... assuming we can agree that it's necessary for the arms to attack from "inside" (inside arc) on the downswing, and assuming we can also agree that the clubhead must attack from *inside* the target line (inside arc) to varying degrees also -- both the arms and the club must attack from a *deep position* relative to the target line so as to create *optimum angles* through the impact zone -- with that being said, I feel it is advantageous for the arms to be more *in front* of the chest and *in synch* with the core and trunk (what some call a *wider* position) rather than being *dragged* from more *behind* the core and trunk in the downswing. Dragging is what occurs if the arms swing to much across and behind the core in the backswing as with MORAD, Hardy one-plane, S&T, etc.

Because the arms and club are wider and in synch with the core and trunk (my preference), a wider arc is maintained by the arms and this translates to the clubhead *releasing* in a manner that produces a higher ball flight than if it is *dragged* from more *behind* the core like that found in MORAD/S&T. The more you *drag* the arms from *behind* the more the arms want to work *away* from the body in the impact zone and the more the butt of the club wants to work down the line. This is a DISASTER if the player desires to maintain the *lever/leverage* until PHYSICS releases and at the same time have the face square up through impact.

I've seen many a VERY good golf swing/player ruined because they had a ton of "lag" and no idea how to release it properly. Probably the least understood element of a great golf swing is "how to PROPERLY AND SIMPLY release lag. So this same player ends up working on some *fix*: "start the arms from the top"... "straighten the right arm in the downswing"... "turn the knuckles at the ground by rotating the forearms through impact"...

Now, as you know doubt already know, once the TRANSITION has occurred, the body is attempting to *work* and rotate left. If the arms and club are working AWAY from the body the player is in trouble: BLOCKED. He must PANIC FLIP in order to have any chance of squaring the face up through impact, or they must practice some compensation *move* as those listed above.

MORAD, the S&T guy's, as well as Jimmy Ballard want a *vertical spine* at address, which does not make sense to as the right hand IS below the left on the club, and, therefore, the spine should NOT be vertical at IMPACT. If the spine is VERTICAL at address this *levels* the shoulders which, as the right hand is below the left, creates a problem: vertical spine = level shoulders + right hand below left = open shoulder and open trunk when compared to the lower trunk and target line.

From the above described set up, the arms MUST be MANIPULATED *to the inside* in order for the player to achieve the necessary armswing *depth* in the backswing, so as to create reasonable *impact zone dynamics* (angles) with both the arms and, most importantly, the clubhead...*unnecessary moving parts* in a golf swing. While these are *viable* ways of swinging a golf club and are FAR better *methods* than most, I just believe there is a better way.

If a player sets up with a vertical spine at address SOMETHING will have to occur in the swing motion to achieve reasonable impact angles. You pivot like Monty and Nicklaus in the backswing (*on top to reversed*) and your upper body, thoracic, and cervical spine will be forced to move AWAY from the target in the downswing, while at the same time your lower body and lumbar spine will be moving TOWARDS the target. This is called the *teeter-totter* pivot, while MORAD and S&T do not explicitly advocate this, it is PLAINLY visible in Monty's and Nicklaus' swings and they both have back problems. If a player can ingrain and *time* the *teeter-totter* pivot and pass through *reasonable impact angles* consistently they can strike the ball very well. However, this type of pivot, which is commonly found in players with vertical set ups, is not the most efficient way to swing a golf club.

If a player sets up with a vertical spine, most will have to CONSCIOUSLY *work the arm across the body* to achieve *arm and club depth*. That is not a necessary movement and can, with some players and in some circumstances, lead to what I describe above. This may be what caused Baddeley to hit it all over the lot with the driver on Sunday at Oakmont. What befell him was *predictable*. Fine iron play with suspect driving based on what he's worked on in his golf swing.

Check out some footage of Mr. Hogan taken from behind. You will notice his spine is on a tilt away from the target. This is also true of Sluman, Toms, Price, Tiger, etc.

## One- and Two-Plane Swing Theories

There are many pros who realized a long time ago that there are TWO entirely different ways to RELEASE a golf club and that each has its own variances. Also there are *components* and pieces to each *puzzle* that are ESSENTIAL to one and DISASTROUS to the other. As stated above, many sources have referred to these releases for more than 20 years either *pushing* versus *pulling*, *swinging* versus *hitting*, or *old school* versus *modern*. Jim Hardy's explanations have capitalized on these understandings and his methods can work for some. However, certain moves essential for success in one will destroy the other and that if you mix and match these, you will most probably end up with problems. Specifically, the "start the lawnmower" move that he attributes to Hogan when, in fact, Mr. Hogan *never* used any such move in his backswing, can be a dangerous move for a *modern* release swing. I have seen this move ruin great golf swings. It forces you to get so flat and inside that you have no chance of the club releasing by itself.

## Lateral Motion Swing Theories

From personal experiences, there are significant weaknesses to the "lateral motion" based swing theories:

- The level *set up* begins the problems by requiring too much lateral motion;
- The clubface has a tendency to get too closed in the backswing;
- The arms and shaft tend to swing too vertically, thereby requiring a tremendous amount of lateral motion to shallow *both* onto an acceptable plane and angle of attack;
- The *axis* of rotation on slides laterally in both the backswing and the downswing, which can result in inconsistent *strikes* considering that the ball never moves;
- The ball flight tends to be low to very low and almost always left to right (way right when you get out ahead of it)...hence, the swing method has become known as "rockin' and blockin' "
- While there certainly is nothing wrong with hitting sliders, as they are easier to replicate under pressure than draws, but in the higher levels of today's game a high ball is a must to be competitive on a day to day basis.
- The clubhead rotates excessively through impact as the method requires one to *release* the right arm in line with the shaft just after impact; *much* more *down the line* than
- This method does not help one vary trajectories and curvature with consistency.
- Although proponents claim that the clubshaft points at *center* at impact, this simply is not the case, almost all great ballstrikers the shaft points in line with the left arm/left hip, or in the case of mid/short irons, slightly ahead of the left arm.....
- Some lateral motion swing coaches use Hogan often as a model, but in actual fact, Hogan practiced very little of the lateral motion swing methods. About the only similarity is the *connection* of the arms. Hogan TURNED into his right side, while the lateral motion methods SLIDE into their right side...a HUGE difference. Another difference is forearm rotation: Hogan had a lot, whereas the slide methods advocate zero forearm rotation.

- The most glaring weakness is the amount of lateral movement of the upper body and head, which is unnecessary to properly swing the golf club. While the head *must* move in the golf swing, but a set-up on more natural *angles* will allow the player's head to move/turn "naturally" from rotary motion rather than lateral motion.
- Lateral motion does NOT create clubhead speed as efficiently, nor can it create as *much* clubhead speed as rotary motion. You can create some leverage by moving laterally and load the club, which can create clubhead speed, but this *load* is then *very* difficult to unload properly. The clubhead travels in an elliptical arc, the arms travel in a semi-circle and influence the clubhead to travel on its ARC. The trunk and torso winds/unwinds in a much smaller semi-circle around two pivot points (legs) and this is what influences the arms and clubhead to travel on their arcs. The less lateral movement needed to get from one pivot point to another the more consistent *all* of these arcs are going to be. Therefore you can create more clubhead speed as there is less lateral motion and more rotary motion. Therefore the clubhead will *bottom out* in a consistent location. Therefore the impact will be more consistent. If the grip strength is correct for the player (which varies), the clubhead will tend to square up to the target line without manipulation. The best of all worlds: maximum speed, consistent plane/path, and no manipulation with the hands and arms to square the face.
- The method wants the ball forward in the stance for all clubs, in order to make it *much* harder to get ahead of the ball (which is a dangerous tendency of these methods), but, if you do not move substantially laterally in the downswing the club will bottom out early resulting fat shots galore.

With all of the weaknesses pointed out, there is a *great* deal of good that can be learned and ingrained from some of the lateral motion methods of swinging a golf club:

- At least the player gets *behind* the ball and to their right side, as it is much better to *slide* to your right side than to not get there at all (the reverse pivot)
- Any player who fully uses the method will be firing *through* the ball *very* aggressively and releasing their right side, which is *much* better than just sitting there *flapping at it* with their arms, as most amateurs do.
- The player will be utilizing more of their *big* muscles, which are *much* more reliable on a day to day basis.
- You can *groove* a repeatable penetrating/boring flight that will not move in either direction very much; you will have a *very* straight ball flight that will *tend* to move fade a small bit.
- Your back will not hurt, as there will be very little stress on the players back.
- The lateral motion method was a very innovative way of teaching our game, and I use numerous drills that I learned from the method.

## Constructive versus Destructive Advice

In my 40 years in the game, I can truthfully say that for every good tip I've heard about the golf swing there are 10 that are, at the very least, applicable ONLY to the person who is giving them, or, at the worst, totally in error and potentially VERY destructive.

There is an old saying that "feel is rarely real," which means what you THINK you are doing is most probably NOT what you are actually doing. This is even truer when it applies to amateurs. Most of what you THINK you are doing is opposite of what you are actually doing.

A common occurrence: A new student tells me what is wrong with their golf swing, which is information I truthfully appreciate knowing and hearing. We then film from four angles -- face on, down target, from the rear,

and from overhead. When the *angles* are *in*, it is inevitable that the student is in shock by the difference in what they ARE doing compared to what they THOUGHT they were doing less than half an hour before.

It is ONLY a game, not curing cancer or repairing bad hearts, and it is the STUDENT that is the most important part of the learning process in golf, NOT the teacher. That being said, it truly takes a unique individual with TOTAL passion for the game, who is dedicated to improving THEIR OWN game to be a true *teacher*. Most golf teachers are *jacks of a number, but, not an ace of any*.

Moral: MOST of what you hear on the practice tee, both from professionals and ole' Joe, is nothing more than BS...at least from ole' Joe you didn't pay for it, which is a big plus.

## Old School versus Modern Golf Swings

At my teaching center I have 10 swings on the computer that I show my students in a row: Toms, Leonard, Furyk, Sergio Garcia, Duval, Trevino, Hogan, DiMarco, Glasson, and Waite. A very eclectic and diverse group of golf swing.

I take Sergio and Furyk and put them on split screen, side by side from similar down-the-line angles. I punch a button and they immediately go to the top of their backswings. I ask the student, "Do they look alike at the top?"...the obvious answer is "no," which usually gets a laugh. I then ask again, "Do their arms and club look alike?"...the obvious answer is "no." I then push a button and it automatically goes to the "delivery position" (club is level and parallel to the target line shaft is at nine o'clock). They are basically *exactly* alike, with the right wrist *set and loaded* while their shoulders are still closed to the line.

I then take them frame by frame from hip-high on the downswing to hip-high on the throughswing. The torso opens up and the arms and club are *pulled* through the impact zone. They have either maintained their "angles and tilt" or are closer to the golf ball. There is a definite *angle* between the right arm and the shaft that is maintained as the club is *pulled* through impact by the left side rotating left. The right wrist is still *set and leveraged* and the butt of the club is working left. The clubhead itself works from inside to inside. The clubface stays square to the arc with no discernable manipulation of the face through impact. The club and shaft *release* in the traditional term *way* left and around the body. They both are very, very *similar* in these key areas. I then show the student any or all of the other players. The same can be made.

I then show them VJ, Mickelson, and a player from the "Old School" Era, Tommy Aaron and it is the exact opposite. All three upper bodies have backed out at impact (the spine looks warped as the lumbar is vertical/thoracic is *on tilt*). In VJ's and Mickelson's case, the club has been manipulated so much that their lower hand is off the club post impact. Aaron's is almost coming off the club. In the through swing, the right arm and shaft are in the exact opposite position from the aforementioned players. The left wrist is *cupped* and the shaft points left. The *butt* of the club has *inverted or flipped* over. In the delivery position it is pointed away from the camera and shortly after impact it is now pointed at the camera. It is also obvious during the *impact zone* that all three player's arms were basically *stuck* behind their bodies and working too much from the inside. Hence, they used their arms and hands to, in *my* words and terms, *manipulate* the club to square it.

## Mental Performance Keys

1. *Concentration* is not false, meaning you cannot just tell yourself, "I'm going to really concentrate on this shot." You can attempt to focus; sometimes it will work and sometimes it will not.
2. Concentration is *ruined* quite often by *anxiety* or lack of preparation. Do not run to the 1st tee and tell yourself to concentrate, as that rarely works. Instead, make sure you prepare for every round like it was a tournament round. Show up early and *relaxed*. Leisurely stretch and hit some warm up shots. End your practice by *playing* the 1st hole on the range. For example, if the 1st hole requires you to try and

draw a 3 wood then hit a draw 3 wood; keep doing it until you hit one; *really* focus on what you did to hit that nice draw 3 wood; then if a properly struck 3 wood leaves you an 8 iron to the green, hit an 8 iron; etc. Do this a few times before leaving the range.

3. Avoid caffeine and energy drinks before your round. These tend to get a player top *amped* up. Make sure you eat properly, as junk food can affect concentration; snack on a banana or nuts/crackers a couple of times a round and drink plenty of H<sub>2</sub>O.
4. It is an old *cliche*, but nonetheless true: ONE shot at time; that is all that you have control over.
5. Play *within* yourself. Do not attempt shots that you think are marginal shots or shots that you are not *totally* confident are within your ability.
6. You can learn *concentration* through practice. See how many times you can bounce a ball off of a wedge without dropping it. Have somebody deal 10 cards (fast), and then turn them upside down; see how many you can name. Practice chipping by trying to hit a quarter positioned on the green so that the chips will be of the proper speed to get within a couple of feet. Or hit a short wedge; try and land the next shot on the previous ball; repeat...when you finish there should be a line of balls out to your full wedge distance.
7. Train yourself to FOCUS on where you WANT the ball to go rather than where you do not. On the target; be it a tree in the distance, the flag, or a spot 20 feet to the side of the flag.
8. Without question, the main reason for lack of concentration is doubt or anxiety. You have to realize that if you happen to hit a crummy shot (which you will), have a crummy hole, or a crummy front nine, that it is not the end of the world, but ONLY a round of golf. It is a game, and you have MANY *blessings* to be thankful for: one of them is the OPPORTUNITY to be on a golf course challenging yourself. Bad rounds are INEVITABLE, but poor attitude, temper, and anxiety are CHOICES and TERRIBLE habits to form in our game.
9. Learn to control your breathing. Take the largest breath you can through your NOSE, hold it for an 8 count...then *s l o w l y* let it exit out your mouth; repeat two or three times but be careful that you do not go to sleep.

## Course and Tournament Preparation

Talk with players that you know and trust who have played the course. Openly seek their advice and information.

Walk the golf course *backwards* from 18 green back to 1 tee with yardage book in hand and making notes. This gives you *totally* different and objective *perspective* of a hole from the green back to the tee.

Make careful notes during your practice rounds. Note possible pin locations, hit 3 to 6 foot putts at a golf tee in the likely pin locations to get a feel for the break and speed. Roll balls from all sides of the green and mark the break in your book. Do the same for grain, etc. Mark a BIG red "X" inside a circle for locations you do *not* want to *visit* (bunkers, slopes, etc). *Highlight* the areas of the fairway that provide the best angle to approach, but *most* importantly the area that affords the highest percentage for hitting the fairway with a reasonable approach distance.

After a practice round or two with this attitude and approach you should be all *ready* to go from a *course preparation* standpoint. Even though you might be chopping it around, at least you have a pretty good idea how to play the course.

## How to Practice

You MUST differentiate between PRACTICE and PLAYING. *Never* play around with your *golf swing* on the golf course when you are attempting to score. It is only ok to *play* around with your swing on the course if you are goofing around late on a summer afternoon by yourself. But NEVER do this when you are attempting to post a score. Golf is a TARGET game, so focus on the TARGET.

There are two types of PRACTICE. *Self Aware* practice and *target* practice; and they are NOT the same thing. *Self aware* practice is exactly what it sounds like. You are *very* aware of what you are attempting to ingrain into your *on board computer* (brain) in regards to your golf swing. You have determined that your *golf swing software* that is currently *loaded* has some flaws. So you are attempting to *write* new *software*. Your desire is to *construct* or *improve* a more fundamentally sound golf swing that is going to eventually allow you to PLAY golf with FEWER thoughts and be LESS *timing oriented*, which will produce more *efficient* results. *Self aware* practice is essential to the development of fundamentally sound technique.

I recommend that when you are working on improving your technique (whether it is your golf swing, short game, or putting) that you do NOT worry about being really precise with your AIM. Your goal is to be aware of your body or your arms or your hands. Whatever it is your working on, work to hit the shot SOLID. Hit the shot more solidly, while ingraining better technique, with NO care for where the ball is going. If you will get to hitting the ball CONSISTENTLY SOLID with fundamentally sound technique, then any good teacher can diagnose in ten swings (or less) WHY the ball is pulling, pushing, fading, hooking, etc. Then you can work on *refining* your technique to gain accuracy and control.

*Target* practice is also exactly what it sounds like. You are focusing on the TARGET. You focus on getting the ball to END UP somewhere near your TARGET. In this type of practice mode, I personally do not care if you *feel* like you have to stand on one leg and hit it with one arm. If that is what you *feel* like you have to do to get the ball to your target, then you do it!

If you spend enough time in the *self aware mode* you will eventually improve your technique and that will transfer to the *feel* of the swing and impact in order to reach your *target*.

When you first start working on changes, you may spend the majority of your time in *self aware mode*. Eventually, with consistent and disciplined practice, this situation will invert and you will spend the majority of your time in *target mode*. When you can be fully in *target mode*, that is when you will play your best, and *that is* your goal!

Most golfers *entangle* these two types of practice. In fact, they entangle practicing and playing, and that is why they are always *chasing their tail*. They cannot seem to improve substantially in order to get to the next level. The mindset regarding practice and playing has a *tremendous* amount to do with whether you are successful and how successful. The more PRECISE your plan, the better you UNDERSTAND the plan. The more DISCIPLINED the plan, the better the EXECUTION of the plan and the quicker and more successful they will input *new software*.

## How to Work the Ball to a Pin

What most people do is they aim their body where they want the ball to *start* (correct) and then aim the clubface where they want the ball to end up, the *primary* target. This is great if you know the ball will stop where it lands every time. However, if you anticipate the ball running out or anything to the opposite side of the target is *dead*, then you do *not* want the ball to have to land right by your *primary* target. You want the ball rolling *towards* or your miss drifting towards your *primary* target without bringing the trouble into play. Hence, you must aim the clubface a little bit to the left of the target for a fade or a little bit right of the target for a draw. When the ball *runs out* or you *overcook* the spin a bit, it will be moving toward your final objective without bringing the trouble into play.

For instance, let us say you have 165 yards to a hole cut "twenty-four at four," which is four yards from the right and twenty-four yards from the front of a green that is, say thirty-six deep (which means you also have twelve

yards of green *behind* the flag) with water off the green to the right. Perhaps 165 for you is a hard seven-iron. Take a six-iron and aim in the *fat* of the green (say twenty-five feet left of the flag). Open the blade a fraction so that it is aimed ten to fifteen feet left of the flag and then attempt to make a good fade swing. If you pull it off the ball starts twenty-five feet left of the target, and when the forward momentum wears off the ball will fall to the right striking the green ten to fifteen feet left the flag; it will bounce once and then spin right towards the flag for a *perfect* shot.

However, if you miss-hit the shot the six-iron is plenty of club so you are assured of at least reaching the front third of the green. You will not push it enough to hit it in the water unless you essentially shank it, and you cannot hit it over the green (a 177 yard knockdown, cut six-iron is not within your ability). If you pull it, the worst case is you are on the left side of the green with a long two-putt or you might overcook the cut spin and be just to the right of the pin or on the right fringe.

This type of thinking is what allows a good player to score (if they can putt and chip) even when they do not have their ballstriking at its best.

## What it Really Takes to Become a Tour Pro

As a person that has been there, done that, I think that I can offer some sound advice on becoming a professional touring player. I will not bother with the *clichés*: work on your swing, your short game, become the best in your area-state-etc.

GOLF must be your life's *passion*. Specifically, tournament golf must be your passion. If it is not, then do not bother trying as you will not make it. The willingness to sacrifice WAY above and beyond the norm is the most important attribute a golfer can have if they want to EXCEL. If you are DETERMINED to make your life professional golf then here is more advice.

Most people will tell you that you are *wasting your time, wasting your life, you will never make it*, etc. You had better have *very* thick skin and the ability to ignore *criticism*, because you are going to get a lot of it. The thing is, most of the folks criticizing you will have never had the guts to stick their neck out and take a chance in their life. If they are not criticizing you, then they are criticizing somebody else. This is how they go through life...getting together with other like-minded and criticize like a bunch of old widow's in a sewing circle. Realize you have a "hole in BOTH sides of your head and YOU determine what goes in and bounces around and what passes right on through." If you are not *tough minded*, then do not even try professional golf.

You are going to pretty much put the "rest of your life on hold" for awhile. Lots of divorces, breakups, dysfunctional kid's, and relationship heartache have been due to professional golf. So you had better be prepared to "go it" on your own for awhile. If you do find a supportive spouse, then she can make all the difference in the world, but that is rare. My dad had a great saying, "one out of ten will make ya', the other nine will ruin ya'."

I've been fortunate enough to work with quite a few young pro's/college players who have high aspirations. I can tell you what ruins the chances of a lot of them ever amounting to much in professional golf, besides those mentioned above, is that they spend too much time "play acting" the "professional golfer." In reality they might only be worried about drinking/partying and hookin' up with the desk clerk at the Ramada ("not that there's anything wrong with that"). They are *not truly* dedicated to their golf game and/or career. They flounder around for a few years and waste many, many thousands of their sponsor's hard earned dollars. This is not to say that you should not have some "fun on the road," but that it *cannot* be a priority.

You had better be in GREAT physical condition. Golf is not considered by some to be a *sport*, but I can attest that to play eight weeks in a row in June and July driving up to a thousand miles between tournaments you *will* get WORN OUT if you are not in great shape. Carry a fishing rod so that you can find some quiet moments alone to *recharge* your brain. Even if your body might be able to handle the *stresses*, I guarantee that if you think golf 24/7 for eight weeks you will be FRIED by week four. You will rarely, if ever, perform up to your abilities if you are tired and burned out. It is REALLY hard to focus on ONE blade of grass on a tough downhill six-foot slider if you

are fried. A bright, clear, and engaged brain is *very* important to your success on the course. In fact, this is a lot more important than how you are hitting the ball most days. A player CAN win without stripping it IF their brain is *engaged*.

I have also been privileged (lucky) to be in the *inner circle* with three very successful PGA Tour players. They *all* swung the club *very* differently, but had ONE thing in common: they all had a burning desire to be successful with their golf clubs, and as a result, they were ALL very organized and self disciplined...very self discipline.

Last but not least: I truly believe that ANYBODY can be successful in our game. It might be just winning the 3rd flight in the club championship; that is success, nonetheless. I truly believe that ANYONE can learn to swing a golf club, chip, putt, and think effectively...IF they have the work ethic, desire, and passion. So *technique*, while important, is not THE determining factor as to who makes it. I truly believe that ANY kid with average to above average athletic ability who has the above attributes can make it in professional golf. It is NOT talent that separates those who makes it and those who do not. TALENT is nothing more than a six letter word that starts with a T and does not mean SHIT. Give me a kid with another six letter word, DESIRE, anyday. DESIRE will top TALENT in most cases. In my experience it is *very* rare to find a kid who has TALENT and PASSION. Sometimes, *things* come too easy to the TALENTED kid. As a result, they do not have to WORK as hard and they do not develop the WORK ETHIC necessary to truly EXCEL.

## Crouching Tiger

Tiger can hit everything. Any shot he desires; solid. He has hit it solid since he was 13 years old with about 4 different swings. With his current swing, it is hard for him to not hit at least 3 or 4 VERY loose shots every single tournament, especially drivers. And this is when his timing is *on*. When its not he is going to hit 3 or 4 drives per day that NASA cannot track.

When you have the kind of incredible rotational body speed that Tiger is blessed with and your arms are working away from your body in the downswing and throughswing, VERY errant shots are going to occur under extreme pressure. Too much *timing* is involved to be consistent on a day to day basis. One time he will hit a shot that is so good it is scary. Next time he hits one that is so bad that it is scary. The shotlink data shows that he is not only missing fairways, but, he is missing them by miles on occasion. Great ballstrikers do not miss shots in this pattern.

He is probably the most physically talented in player in golf history; perhaps the best putter in golf history; perhaps the best *scrambler* in golf history. That has NEVER been a golfer that was more *mentally tough* and absolutely *fearless*. Those qualities are what allow him to play so well and *score* so well. However, his overall ballstriking leaves a lot to be desired. That is why you do not have to be the best ballstriker to be the best *player*. Nicklaus was an average (at best) short iron player; average chipper, bunker player, and pitcher; but he has become the standard of *player* by whom all are measured. Up to this point, Tiger has set a standard that is substantially above Nicklaus and longevity is all that is left.

Tiger swung the club pretty well during 99' and 00', with a short, flatter armswing. At the time there was no "out, up, and around" backswing armswing. Then sometime in 01' he started *mixing* methods. The result was aiming right, hitting big blocks, rips, and occasional big hooks.

From '01 through '03, Tiger's *pivot* was beyond terrible, and it started with his set-up. His left hip was 4 or 5 inches inside of his left heel which placed the *top* and *bottom* of his left pivot point 4 to 5 inches apart, on a severe angle away from the target. This was way too far apart to realistically ever get to his left side/pivot point. Basically his stance was too wide with his left foot. As a result, with a driver, when he placed the ball properly as it related to his sternum it was probably at least 6 inches inside of his left instep. He then had a tendency to slide his whole body laterally away from the ball as he initiated his backswing, which moved his left hip, head, and spine another 3 or 4 inches away from his left pivot point. His spine became way too vertical at the top of his backswing.



These moves, when combined the "out, around, and up" backswing armswing placed him in a terrible position at the top; arms out, away from his trunk, and too steep, with the shaft out of position, off plane/laid off to his body; spine *tilt* too vertical; 9 miles from his left side/left pivot point. The only way he could then get his arms in a decent position on the downswing was to flatten and shallow his arms. However, the shaft and clubhead needed to be on a steeper plane to keep it from getting stuck. This was pretty tough to do when he needed an 8" or so lateral move to properly get to his left side/pivot point, which he could never reach without his head moving with his lower body in the transition.

As you probably know, lateral movement in the downswing with the lower body will flatten the arms, but, it also flattens or shallows the shaft. The result, because his shaft was out of position, was the shaft/club getting stuck behind him badly when he made a decent transition move. Or he had to hold his body back and work his arms down which resulted in having to have superior timing, as there would never be enough lateral motion to get to his left side. He would spin out terribly. Also anything LESS than a vertical left pivot point (left hip over the left knee over the left heel) at the end of the transition IS a spin out. It was physically impossible for Tiger to get to his left side from this godawful backswing without moving out ahead of it and then as a result getting the shaft and clubhead so stuck that he would probably miss the ball. Resulting in no reaching his left pivot point, very spun out, and the club/arms would be stuck/trapped behind him.

SO, if you are Tiger, what do you do? Drive your lower body 8" laterally, which is the only way he could get to his left side properly. It is basically impossible to do this without your head moving substantially forward. If the head stays *back* (quiet) and his lower body moves a substantial amount laterally to get to his left side, he would then be so far underneath with the upper body and the arms and club, so stuck and trapped that he would also probably come so far from the inside he would almost miss the ball. And then because his head did move laterally during the transition, as it had no choice but to go forward due to the terrible set-up and lateral sway away from the ball during the backswing, Tiger had no choice but to *reverse* his head away from the target in order to get back behind the ball (which he did the long clubs), which got his upper body moving away from the target and *underneath* while his lower body was moving towards the target *and* spinning out. The result is that he would get his upper body severely STUCK underneath with his arms and club coming too far from the inside which will necessitate a big time *flip* to square the face at impact. When he timed it well he hit it well, but he still hit the golf ball all over the planet for 3 years with the driver when he mis-timed the shot.

While I am not a big fan of Haney, but I have to give them him his due, as Tiger's set-up became much better. He basically eliminated the lateral slide on the backswing. His armswing became much around and in-synch with his trunk/core and on a much better *plane*. The arms and shaft became much better *in-balance*.

As a result of this *tremendous* improvement in the backswing Tiger's *transition* was much better and the club, arms, and trunk were moving down much more in synch and *in-balance*.

The only thing that I did not care for was his apparent attempts to swing the club arms out and away from his body through impact and away from his rotating torso, which is trying to go LEFT very, very aggressively. Basically his arms are *running* away from his body through impact and in the *throughswing*, much like Moe Norman's.

Lately I have noticed that he is back working with that *out, up, and around* backswing/armswing. If he would get the club and arms set *in-balance* at the top like Toms or Glasson do at the top of their backswings (both of whom allow their arms to *settle-in* at the last possible split second of the backswing, whereby their arms actually flatten and the clubshaft steepens), then he could get away with the *out, up, and around* stuff. If he does not *time* the swing properly he will hit an occasional off the charts bad shot as his arms are running away from his body on the downswing, blocked to his torso...sometimes 2 or 3 a round or more.

I believe that until he learns that the trunk, arms, and club all swing on 3 arcs that are basically parallel with one another and perfectly synchronized, at least on the downswing/throughswing, and that all 3 *arcs* work to the left and around after impact, then he is going to continue to be brilliant one second and awful the next.