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Simply step by step to a pro tip.

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Know the perfect shape, and how to shape.

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Devised and introduced by Nic Barrow.

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## **Welcome to** **The Snooker Gym™ Training Guide Series.**

The intention of this series is to educate players, coaches, journalists and others who are interested in any or all of the departments of this fascinating sport.

For the Training Guide Series, snooker has been taken down into its' main constituent parts, each one of which has its own edition in the series.

Each guide will give you a stated objective on the front cover, letting you know what you will gain from knowing and applying the information inside.

Within each guide, you will first find a list of headings for an overview of the subject. Underneath each heading will be a rough description of what you will get from each section.

Each section goes into the nuts and bolts of the game, so that anybody wanting to, can derive a fully comprehensive understanding of the game from the ground up. This is particularly useful for individuals studying to become a Snooker Gym™ Instructor, and forms part of the coursework for that programme.

Youth, others learning the game and those still improving their amateur status will also benefit highly from understanding each part of the sport.

This level of detail is NOT, however, suitable for professionals and high level amateurs about to play matches. While useful for pre tournament checks or pre season study and performance development, the professional should always ask for what purpose they need the detail. Their job is to concentrate on the business of winning, and taking their game down to its' finest components just before competition can take their edge off the focus on results.

Other psychological and physical preparation methods found in other tools available from The Snooker Gym™ are more suitable for players of this standard before matches.

It only leaves me to welcome you to this bountiful garden of knowledge I have been fortunate enough to discover, and wish you well in your quest for the kingdom of snooker performance.

Nic Barrow.

Dubai.

October 16th, 2004.

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## **Introduction.**

I know the information that follows will prove invaluable in helping you to get the most out of your game. A good cue tip I have found can instantly make a difference of up to 20% in a client's game. At least 60% of all the tips I see on my client's cues can be made at least twice as good by very simple procedures.

Over the years I have gained much experience on this subject. I have spoken with many fellow professionals on the subject, and had a chance to see many top tippers ply their trade.

One of these exponents I had the privilege to meet and see in action is Lawrie Annandale - cue and tip doctor to the stars. On one occasion Stephen Hendry was at a tournament in Germany, needed a new tip on his cue, and paid for Lawrie to fly out to Germany that day. Just to put Stephen's tip on.

After practicing the points in this manual, you will be able to do a great job yourself without having to go to the expense of flying your own cue doctor out to do it for you!

To make your next tip a top tip, read the following from start to finish and work through

the simple points 1 - 10. Then report back, having made lots of 147's...

### **Tip mounting emergency travel kit.**

Equipment required for emergency travel tipping kit:

#### ***Small soft case to house your personal, portable tipping kit.***

This means you can travel light and still put a great tip on. Samsonite make a particularly good soft case for this, and it fits nicely in the palm of your hand so it easy to carry around when at tournaments.

#### ***Chalk.***

If you are travelling to Asia, please make sure you source original chalk, or even better buy some from Europe or the USA before you go to Asia if you intend to play there. Unfortunately, many companies make inferior chalk and try to copy the labelling of Green Triangle or other top brands. These imitations are of the wrong colour and are like a powder that falls off the tip rather than a film that covers the tip and stays on. With

experience you will be able to tell the difference between the two.

### ***Emery paper – the ‘black sandpaper’.***

Make sure you get the required grades for a good tipping case – 400, 800 and 1000 grade.

### ***10 tips.***

These must be sanded on the underside until they are the correct thickness to put on without too much shaping required. Elk Master, Blue Diamond or the newly introduced (as at 2004) Titan tips I have found are most effective. Titan in particular are very hard and need little playing in. They are virtually impossible to break, will last a very long time and are easy to shape because they do not break out into fibres unlike the other two brands mentioned here.

### ***Superglue.***

Must be ‘Gel’ to avoid liquid glue spilling all over the cue shaft!

### ***Lolly sticks and beer mats.***

With an official name of ‘tongue depressor’, the doctor’s sticks that you can buy at most good



pharmacies do a great job of finishing off a tipping job. They burnish, and thus harden, the sides of tips after they are stuck on and shaped. If you cannot find these little miracles, a cardboard beer mat is a very good second best.

### ***Emery boards.***

Used for finger nails, but also very useful for shaping the tip and performing emergency repairs, for example after a miscue.

### ***Small, sharp pocket knife and spare blades.***

A surgical scalpel is also a good tool for the finer aspects of tipping, but the pocket / craft knives usually have a retractable blade which is important from a safety point of view.

### ***Stanley knife blades.***

Use these for levelling of ferrule after you have taken the old tip off.

### ***Finger plasters.***

In case a player breaks their skin on the bridge or grip hand, protecting the discomfort can mean the difference between a win and a loss. These plasters should be of a material on which the cue

will slide easily. It is no good needing a plaster on your bridging fingers, getting all excited that you are well prepared and then finding out that the plaster does a great job of sticking onto the cue like Sellotape®.

### ***Tissue.***

For wiping glue off the ferrule.

### ***‘Cue Rite’ rest leg aid.***

This is in case you lose the rest leg extension from your case. It is always very useful to have a spare one on hand.

### ***Pin.***

For lumps of dust under practice table spots, and also for sticking into the opened end of a superglue tube to prevent the glue catching air and drying out.

Slide the pin tip underneath the spot, swipe the pin tip around a bit and watch those lumps under the spots disappear. If the owner of the club is closed minded, DO NOT let them see what you are doing. Simply tell them that the balls are not jumping off the spots anymore. Inform them that this means that no more are they

ruining the cloth due to jumping across the surface, and neither are the balls being damaged and marked heavily by heavily kicking each time a ball is played off its' spot.

Then just make sure you do not tell the closed minded owner how you did it. Just let them be happy with the result!

***The finest grade wire wool you can find.***

This works miracles in polishing ferrules, and unlike emery paper does not wear down the width of the ferrule such that you need an annual replacement.

***Cue wood wax and appropriate applicator.***

In case you scuff the shaft of the cue, the right colour wood wax will do a great job of disguising your mishap.

***Talcum powder in small container.***

In case you or another player needs to place a little powder on the groove of the bridge hand in cases of high humidity, and thus stickiness.

### ***Duff cue ball.***

These are fantastic for playing the cue ball in, instead of having to actually play the game for a couple of days. I even got my cue ball cut in half in an industrial machine so that I can easily carry one half of it in my tipping case and the other half in my cue case.

### ***Ear plugs.***

Make sure you get the wax ones used by swimmers that do such a good job of blocking out sound, it is as if you are underwater yourself.

This may seem like a weird accessory. It is nothing to do with putting a tip on, but can help you use your tip with more effect.

What do I mean? We are getting into the realms of discussing striking the cue ball here, but it is worth mentioning because it can have such great results if you are open minded to try something weird for a few minutes.

Just put the plugs in firmly and go through some practice routines for anywhere between five and thirty minutes. You will be forced to judge your cueing speed and strength of stroke by sight and feel only. In doing this you will notice how much you do actually rely on hearing to cue up to

the ball, strike it and gauge how well you played the shot.

Then take the plugs out, repeat the same practice routines, and notice the positive difference in how you are striking the cue ball. Repeat this every day for a week or a month and you will be well on your way to striking the cue ball as sweetly as any billiards professional.

The only thing I warn against is practicing this in front of others. I suppose the benefit is that because you are wearing the plugs, you would not be able to hear them sniggering away as you practice! But the smiles will be all yours when you play them next...

### **Cutting the old tip off.**

Instead of ripping the old tip from the cue, gently slice it off with your sharp knife to avoid damaging the delicate wood underneath the tip.

Then scrape the excess glue and tip fibres from the top of the brass ferrule. Use either the Stanley blade or a file for this job.

## **Filing the top of the brass ferrule to a perfectly flat surface.**

This is one of the most important parts of putting a tip on.

Have you ever sat on a chair with one leg shorter than the others? Not great, is it? This is exactly what the tip feels like if it isn't glued onto a perfectly flat surface. It's not too good for your game, either!

You may need to use the metal file to gently create a more or less flat surface on the ferrule before the following stage. This is where you firmly place and hold the Stanley blade vertically into the top of the ferrule. Then you simply turn the cue underneath it until the blade scrapes the brass and wood to flat perfection.

## **CARE!**

Assuming my client in Abu Dhabi knew about safe blade handling, I showed him how to flatten the ferrule in person when we were at the club together one day. The next time I saw him, his thumb was in bandages with blood seeping through them.

He told me that he was levelling the top of the ferrule, but pushing down onto the Stanley blade with all his weight, whilst simultaneously gripping the cue with his bridging hand about three centimetres below the ferrule.

I am sure you can imagine what happened next when he slipped, so I won't go into the details. The next time you go to Abu Dhabi snooker club you may see what I saw there – about two feet from where my client was performing this self operation, there were literally blood spots going up the wall at a forty five degree angle to shoulder height. Not a pretty sight.

So please be gentle in how you handle all blades, take your time, use the minimum amount of force required and hold the cue well down from the ferrule to protect your fingers in the event of a slip.

Alternatively, lie the cue down on a flat surface and rub the file across the face of the ferrule a few times. When doing this it is better to go slowly, making sure that the file is only moving exactly square to the ferrule to give the perfectly flat surface that you need.

After you have finished levelling the ferrule, just check that none of the edges of the ferrule are

sloping down from the horizontal. This fault is very common in previous attempts to put a tip on without having read this guide. It is the tip we want to be done shaped – *not* the ferrule!

To check you have done what you have set out to do, place a totally straight edge (for example, the back of a Stanley knife blade or even a ruler edge) on top of the ferrule. Now see if you can make out any tiny gaps at all between the straight edge and the ferrule top. *Especially at the edges!*

If you can see any gaps, you need to keep going until you can see no tiny gaps whatsoever. On your final check, make sure that the ferrule is flat from two or three different directions before signing it off as a complete job.

### **Sanding the base of the new tip to a perfectly flat surface.**

The base of a brand new tip is always very rough and needs to be just as flat as the ferrule top.



To achieve this, simply place the tip base down onto 400 grade emery paper that is placed on a flat table or work surface.

Now press the tip down into the sandpaper and turn it round and round in a circle or figure of eight until the base of the tip is one flat, smooth surface. I also recommend to keep going with the sanding until the tip is about half its' original thickness. Why? It makes the tip much quicker to 'play in' if it is thinner. With a fat tip, it is often like playing with a pillow on the end of the cue, and pillows do not hit the cue ball very well! Smaller equals harder, and harder equals the same state the tip is on just before you take it off. So do yourself a favour and put a tip *on* that plays the same as the one you just took *off*.

Dispose of the powder this generates with care as it's not much good for your lungs if you breathe it, nor for the carpet if you spill it!

### **Superglueing the new tip on.**

Read all the instructions on the side of the tube carefully and be **very, very** careful to place the tip onto the ferrule correctly first time. If you

don't do this, you will have to take the tip off, prepare the ferrule again and probably use a brand new tip. Even with all my experience, I've had to do this before, so it's no disaster if it happens to you - just a 'learning experience'.

With the Gel glue, spread enough to cover the full surface of the ferrule. You can then literally sit the tip on top of the glue and leave it there. This will give you a few seconds to check that the tip is in a central position before you gently massage it down into the solid bed of the ferrule.

Once the tip is in the correct position, just hold it firmly into the ferrule for a few seconds. Keep your concentration on what you are doing in this crucial period, because when the glue is not yet fully set, it still has the potential to slip into a different position. You will then have to start again.

These few seconds are all you need for a solid long term hold, although you should leave it for a minute or so to fully set before starting to shape the tip.

## **The best tip shape in the entire world.**

Before talking about how to shape the tip, we need to know the shape we want.

A description of the best tip shape possible is somewhere between flat and a semi-circle. Too flat and it will be hard to play with extreme spin as the sharp edge of the tip, with very little surface area to grip, is all that will be contacting the cue ball.

Too rounded and it will be like trying to play with a pin, and the pinnacle of the tip will be all there is to find the centre of the cue ball. A flatter tip will give one a margin of error for not quite finding the centre of the cue ball with their cue action.

## **Shaping the new tip.**

Using the file, use long, downward strokes against the side of the tip.

Mind to keep the file away from the shaft of the cue, and keep firmly stroking the side of the tip with the file until the tip sides are virtually level with the ferrule sides.

This may take anything up to about 10 minutes or more depending on the size of the tip and the firmness of your hand movements.

It is very important not to stoke the file in an upward direction against the side of the tip. What happens if this is done is that the tip will usually begin to break up and fray with the tip fibres beginning to unravel themselves.

The other way to level the sides of the tip with the ferrule is to take the craft knife or Stanley blade against the side of the ferrule, such that the cutting edge is looking up to the overhanging tip. Then apply upward pressure to the blade and with the other hand turn the cue around such that the blade gradually cuts away the excess tip that overhangs the ferrule. The sides of the tip should slowly pull away like an orange peel. Keep going gently without hacking or ripping the tip, until the tip is more or less vertical and level with the ferrule.

At this stage, you can stop short of cutting the tip with a perfectly vertical edge. Some players do prefer a tip with a slight mushroom effect as they often find it appealing to the eye, or reassuring the see at least some of the tip when they are cueing up to the ball. So if you are doing this for

someone else, ask them beforehand what they prefer.

One method of shaping the sides of the tip that I advise *against*, is the chopping block approach. This is where the cue is placed upside down onto a wooden chopping block. A knife is then used to cut the edges of the tip downward toward the block. While this may seem a quick approach, it tends to pull apart the fibres of the tip such that when the cue is turned up again, the tip has the appearance of an open concertina.

People do not appreciate being on a chopping block, so why would your tip appreciate it? Leave this method to others who have been doing it all their lives and won't try new approaches.

When the edges of the tip are level with the ferrule sides, use 400 or 800 emery paper to go over the top part and sides of the tip to create the domed shape to the tip. Any courser emery paper will tear and fray the fibres of the tip.

**WARNING TIP:** If there is a sharp edge where the side of the tip meets the top surface, this will give virtually no screw or side spin when you hit the cue ball in the correct place. A softer edge will give you best screw shot results,

although you have gone too far if you have a tip the shape of St. Paul's Cathedral.

A POINT ABOUT MUSHROOMS! You may have seen players on TV with tips that overhang the side of the ferrule by a long way. These 'mushroom tips' still perform their purpose, but they tend to break more easily. This is because the sides of the tip have the foundation of thin air rather than solid ferrule. The mushroom tip can also distract your concentration when you are on the shot and looking down the cue.

### **Playing in the new tip.**

Using the battered old cue ball, knock it into the top of the new tip quite ferociously to mimic hitting the cue ball hundreds of times in an actual game situation.

The purpose of doing this is to bed the tip down into a solid form to give a more definite strike on the cue ball. The same principle is used with those huge vibrating machines that jump up and down to compress the tarmac in road works to make the road more solid to drive on. This tip

solidity will make it easier to perform all sorts of wizardry with the cue ball.

A hint on how long to spend doing this. I used to play the tip in like this for twenty solid minutes (allowing for tired arm breaks!). I once worked this out to be equal to hitting the cue ball about 1,800 times with my hand! Every few minutes when doing this, I used to just re-shape the tip with emery paper to the perfect dome shape we talked about earlier on. This was necessary because as the tip was beaten down it compressed slightly and became a little flatter.

Another 'tip' that may help you here is to chalk the new tip a few times during this exercise. After all, you would do this if you were playing 1,800 or so shots on a snooker table to play the tip in, wouldn't you? The chalk helps give a more realistic, solid contact between the battered cue ball and the new tip, leaving less scope for miscueing as you play it in. Just repeat this until you feel comfortable with how firm the tip is.

**WARNING TIP:** A good way to destroy a cue ball that is in use is to do the above with it. It is a great way to annoy a Snooker club owner, get barred from the club and make marks in the cue ball that you can't get off. Make sure you get a cue

ball that is out of commission, or buy a new one that you can have to yourself.

### **Finishing the tip.**

Now you have a beautifully solid tip, with a great shape and firmly glued down to the ferrule.

Go over the whole tip gently with 1000 emery paper to give a final smoothing of the whole tip surface and sides. With the knife, shear away from the ferrule any glue that seeped out from under the new tip onto the ferrule. Emery the tip sides until they are level with the sides of the ferrule.

Use 1000 emery paper to finish cleaning the ferrule of any glue residue. Use force sparingly when doing this to prevent wearing away the sides of the ferrule and effectively reducing your future tip size. It is surprising how quickly a player can develop 'inverse flower pot' shaped ferrules after viciously sanding their ferrules down without realising it.

The flower pot effect makes it harder to see and strike the centre of the cue ball. The main advantages of a wider ferrule and tip are an enhanced ability to see the centre of the cue ball



when aiming, and a bigger margin of error to hit the centre of the cue ball if the cue is not delivered in a perfectly straight line.

### **The final countdown...**

Grab your wire wool, wrap and hold it firmly around the ferrule and with the other hand gently turn the cue round and round. This has the effect of polishing the ferrule to a brilliant gold colour and getting all the dirt and imperfections off it. Mind not to keep the wire wool away from the shaft of the cue.

Now take your tongue depressor or beer mat, and quickly rub it back and forth, sideways against the sides of the tip. This is very important as the process will give a film-like seal to the sides of the tip. This will make it much stronger and less likely to break or fray after a lot of use, or miscues.

Finally, you can apply the back of the emery paper to the ferrule (which is the same smoothness as normal writing paper), give it a few turns, and you will see that it polishes the ferrule even better than wire wool.

When the tip looks smart enough for you, apply chalk and play.

### **Maintaining the tip.**

If the tip is done correctly first time, you can forget about it until you need a new one, right? Wrong!

Particularly in the first few days of a tip's life, fibres will sprout from the sides of the tip as it beds in and spreads out. If gone unchecked, this can erode the foundation and structure of the tip, leading to a broken tip after just one miscue.

The best way to combat this is to take 800 emery paper, wrap the edges of the tip in the rough side of the paper, and turn the cue around until the edges of the tip are without hairs again.

Buff the sides of the tip with the lolly stick until the edges of the tip are solid again. Repeat this process whenever the sides of the tip sprout fibres. Once the tip is a couple of weeks old, the frequency with which you need to do this will start to evaporate.

One other fibre that sometimes comes out of a new tip is the one that protrudes from the

striking surface of the tip. These are rarities unless you have used emery paper that is too coarse for shaping the tip.

These fibres are also very dangerous to the health of your tip. Experience will show that if you try to pull one of these out, you will often rip apart all the surface tip fibres. You will then have no choice but to put a new tip on.

The best way to put these to sleep is to gently rub 800 or 1000 emery paper over the hair until it goes away. Then buff the top of the tip to a solid shine with the lolly stick to solidify what you have. Finally, emery the top of the tip back to shape before chalking and continuing your game.

### **The final test...**

So the tip is on, looks as new and you are raring to go. There is just one more job to perform. This is where the tyre meets the road, and is the final adaptation process.

No matter how hard you have made the tip, it will be thicker than the old tip that became so thin you needed to replace it. This means it will be softer. Which in turn means it will throw the cue

ball off more when you play with side spin, and react slightly differently on top, screw and stun shots.

There is only one way to get used to this such that you can go straight into a match with complete confidence within minutes of putting the tip on:

Apply the OPP (Observe Predict Plan) model to how the tip is reacting.

The following five part exercise assumes that you have the ability to pot a ball when playing with extreme side spin on the cue ball, compensating your aim as appropriate to the speed of shot, distance to object ball and amount of side applied.

If you have not yet acquired this skill, find a coach to show you how, apply the information in other manuals in The Snooker Gym™ Training Guide Series, or skip parts a) through d) of the exercise and simply do the last part. You will not be playing with side in your games anyway, so will not need the learnings from parts a) through d).

This practice can also be used to get quickly used to a new table cloth, new balls, a different

table or any unusual condition the table is in. These variables and more are discussed in 'The Joy Of Bad Tables', from The Snooker Gym™ Training Guide Series.

***a). Close up side.***

***Set up some straight blues in the middle pocket.***

***Play with maximum side.***

*Observe* how much the tip is pushing the cue ball to the side. There are no targets for the object ball here – if the ball misses the pocket that is invaluable feedback. Not many players give themselves the space necessary to miss a ball, be okay about it and learn objectively from the shot. They usually seem to beat themselves up.

***Keep Observing with 70-80% power and full side.***

Continue until you have a good idea of how the tip is reacting.

***Now Predict where the object ball will go for a particular aim.***

Make this prediction after you have got into your final aiming position and are down on the shot. Then play the shot and see if your prediction was correct.

***Keep Predicting until you have a good idea where the object ball will go.***

These shots are still to be played at 70-80% power.

***Plan where you want the object ball to go into the pocket.***

Make this target the centre of the pocket.

***Keep Planning the amount of aiming compensation you need.***

Repeat until you are confident that where you aim is where the ball eventually goes. If you have not done so already, play with left and right hand side to check you are now correct with both sides.

***Backpedal to the Observe and Predict stages if required.***

Do not move onto part b) until you can *Plan* your aiming with confidence when playing with the shot given here.

***b). Repeat the OPP model.***

This time with a red a few inches from a corner pocket, the cue ball half a table length away and playing at 30-40% power. Play this easy pot with both left and right hand side.

This will affirm your complete comfort with the new throw of the cue ball in either direction,

which is very important with the longer distances involved than in routine a).

***c). Repeat the OPP model.***

Play the break off shot with the amount of side spin you would normally play it with. This will help you to be comfortable using side on long safety shots, and to a certain extent long pots.

***d). Repeat the OPP model.***

Now play long distance angled stun shots that will send the cue ball behind the black, off the side cushion and round again for the blue in the middle pocket. Play these shots with the amount of side you are comfortable with. If you normally do not play these shots with side, just do so for the purposes of this exercise.

***e). Repeat the OPP model.***

Select a short range straight shot that you can pot easily. Play every shot at 50-60% power, and work with varying heights on the cue ball. The idea here is to ultimately be at the stage where you can *Plan* where the cue ball will go, backwards and forwards, with the full variation of heights on your cue ball.

After you have completed e), you can go through a sixth optional exercise. Adjust the same shot you played in exercise e) to have a slight angle, and keep everything else about the exercise exactly the same.

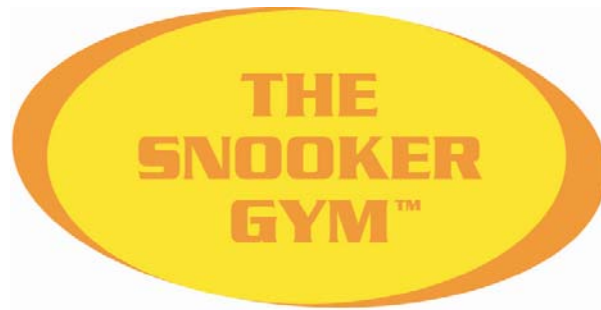
The only difference will be when the cue ball shoots off at varying angles from the object ball, as opposed to only straight back and forth with varying speeds.

When you have applied the OPP model to these five shots, you will now have full confidence to play any shot that comes up to you in the match that you are about to get involved in.

The beauty is that this only takes 10-20 minutes if you are familiar with the exercises. Not bad, considering that a lot of people still believe one needs 10-20 *days* to play a new tip in.

Not so with this system. Have fun surprising your friends, colleagues and opponents by putting your new tip on, and playing your best snooker from the first frame.





**Improving Your Game,  
From Every Angle™**

## **Training Guide Series.**



Worldwide exclusive training materials for the  
International Billiards & Snooker Federation

## **Improve Your Practice, Improve Your Game.**

Save yourself years of research.  
Know how the professionals practice.  
Know what is *really* required to improve your game.  
Understand when *not* to practice.  
Real life examples from both snooker and Hollywood!  
Discover the secret ratios and averages.  
See the power of the worst case scenario.  
Realise how practice is actually mastered *in planning*.  
What to do when it seems *impossible*.  
The four dimensions of practice.

**[www.thesnookergym.com](http://www.thesnookergym.com)**

**Devised and introduced by Nic Barrow.**

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Nic Barrow.

Dubai.

January 14<sup>th</sup>, 2004.

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## **Introduction.**

I never used to understand how to practice really effectively in my formative years on the Snooker table. It cost me a lot of the improvement I have now made, at that formative stage.

What I'm so excited about is that after many years of research, I have now discovered some important fundamentals. Fundamentals that will greatly increase your rate of improvement. (Obviously only if you action them yourself, just knowing about them isn't good enough).

More bonuses of actioning these aspects of effective practice will be an increased enjoyment of the game, deeper concentration when in practice and reduced commitment of time and Snooker table fees for a given amount of improvement. Lets not also forget the fact that you will be able to work on the next area of your game a lot sooner through covering your other practice much more efficiently.

Let's have a look at the different ways we can better our practice:

### **Practice the same shot!**

What do I mean by this? I mean that when we are practicing a particular shot, even a tiny change in the position of the object ball or the cue ball or both can make a **massive** difference in how the shot needs to be played for a successful result.

An example of this is if you were practicing a black off its' spot with the cue ball just 6 inches away from it and at a potting angle of 10 degrees. If you then increased the angle of pot by a distance of 2 inches, the potting angle would now be roughly 30 degrees - an increase of **200%**. If this doesn't make a big difference to the shot you are faced with, I don't know what would.

So how do we make sure we **are** playing the same shot each time? Simple. Just gently put a small and discreet chalk mark underneath the cue ball and object ball of the shot you want to practice. You will now be in a position of greatly

enhanced learning. The following example will help explain why.

If you wanted to learn that “le chat” in French means “cat” in English, you would stand a greater chance of absorbing one word in French if you were to repeat “le chat means cat” 10 times than if you were to repeat 10 different words in French only once.

When practicing in this way, you are also free to focus completely on playing the shot rather than having to be concerned with exactly where you want the balls to be placed.

Having said all this, on occasion it **can** be useful to practice a general type of shot and place the balls in slightly different positions each time you play the shot. However, if it is a shot you have been struggling with, you will benefit most by using the above method virtually all of the time.

### **Don't practice the shot that much.**

“What!!” I hear you think, “I thought practice makes perfect!?”. Well it does, but only when



done properly and one of the most effective ways I've found of improving my improvement rate is to **limit the number of attempts I have** at a particular shot I'm working on.

There are actually a few ways to do this:

### **Number of times, amount of time.**

A client of mine once improved their game dramatically by simply doing the above when practicing the range of shots we had designed together.

The main advantages of this approach are that it helps us focus much more intently on what we are doing if we know that we have committed to limiting ourselves to only 20, or 5, or 100 attempts or 5, or 2, or 25 minutes of playing the shot.

We also have the advantage of a greater sense of direction within our practice time, finding it easier to form some type of purpose for our time at the table. As opposed to getting drawn into aimlessly hitting balls around the table just because we can't think of anything better to do - patently not a useful way to play!

With this approach, the feedback we get on our performance is also a lot more apparent and it is easier to gauge exactly how challenging we actually find a particular shot.

The danger here that I have found for my clients is that they have the privilege of seeing so many of these fantastic performances on television that it becomes easy to compare themselves to these performances. Thus leading to thoughts such as “I’m so useless.” and “I’ll never be able to do this shot.” or “I’m going to smash my blessed cue.” and perhaps “I’m going to pack up playing this stupid shot and just mess around doing easy stuff.” (Not that **I’ve** ever had any thoughts like this, of course!).

### **Worst case scenario.**

The secret is to be able to, before we start practicing, accept the worst case scenario of our weakest possible performance at this shot. This is so that if we get 3 out of 20 of the shot, and have our worst case scenario predicted as 2 out of 20, we won’t start beating ourselves up emotionally.

This way we are empowered to see what our real standard at a shot is and perhaps realise that we need to spend ten batches of twenty shots at it before we realistically can be at a level we are happy with.

This method also gives us a sense of competition in that we have our previous best to shoot for. Or maybe you would be more interested in matching your average score as often as you could do.

### **Play until a number is reached.**

Here, the objective is to complete the routine in as few strokes as possible.

It is easier to get into a downward emotional spiral in this type of routine than in the type above. This is purely because there is scope for a longer run of attempts to not go where you are aiming. So beware of this!

### **Awareness, cures.**

Every desert has water, however, and the of benefit of going through such a drought of the

accuracy you intend is this - the experience may help expose for you a tendency to hit this shot harder or softer than is needed, or further to the left or the right than is needed.

There is often a massive advantage in this itself and I have found a hidden benefit of being acutely aware of our 'lower than we want' standards.

The benefit is that very often **AWARENESS CURES.**

This I have discovered applies to a complete beginner in sport as much as it does to someone like me who has practiced for many years. The reason that awareness itself often cures is that our mind learns very quickly (you just need to see a baby learning to speak to know this). If our mind is put in the situation of being forced to confront its' own 'shortcomings' it very often will get off its' backside and make sure it does something different and better from now on!

**Play until a *percentage* is reached.**

For example, you may want to go through a particular routine until you have pulled the shot off successfully 7 or 8 out of 10 times. To get the most benefit out of practice, start off at a level where you can successfully complete the task 50-60% of the time, which will give you the head room you need to improve up to 70-80 percent of the time. At this performance point, increase the difficulty a little so that you are again at the learning phase of a 50-60% success rate.

### **The three golden benefits of carrying on regardless.**

If you decide to go down this route, a vital part of your approach will be to commit to yourself before you start, the following - if you miss the first three shots and therefore have no way of hitting your desired average, carry on until you complete your cycle of attempts.

This idea gives you three privileges.

You firstly will obviously gain the (possibly uncomfortable!) feedback on what your true standard at the shot is if you are forced to face up to the averages you are getting.

Secondly this will also give you a taste of what it's like to play on in a game when there seems little chance of success, whilst still giving it everything you've got.

This second little idea will also help you when you are on a shot that you are not 100% sure of potting. If you keep giving it everything despite the uncertainty of the result of the pot, you will obviously access your potential much more consistently than otherwise. I can personally vouch for the fact that giving it everything despite uncertainty is tremendously valuable. The best example of this in my own game was the time I was competing in the UK Tour (or 'B Tour') of the professional game. That year, I had mastered the self control involved in giving it everything regardless of what was happening in or outside the game. For one entire season, I thus gave *every single ball I played* 100% attention whatever the score was, just for the pride of giving it everything at all times. There were 317 players on that tour competing for places on the main circuit of 128 players. Each tournament had five qualifying rounds – and as a direct result of this self control, I was the only player out of 317 to win the first

fifteen consecutive qualifying matches, with five of them being won in the deciding frame.

Finally, an anecdote from Mr. Jim Carey, the world famous zany comedian. When interviewed by Oprah Winfrey on her very popular U.S. TV show, he said that one of the cornerstones of his fabulous success was in his early stand up comedy days. He said that every now and then, he would deliberately go on stage to perform his act **with the sole intention of getting booed off the floor!**

“What?!” Oprah asked incredulously.

The response Carey gave was that he felt a desire to be free of the constant demand in this society to ‘be successful’. By deliberately experiencing this ‘terrible failure’ he was giving himself the permission to fail. By actually experiencing it on purpose he got to see that it wasn’t such a fearful experience after all. Which seems to have helped him somewhat in his career!

The parallel here in your game is that if you complete your run of shots with the knowledge that you won’t hit your desired average, you will

be experiencing some of that which has helped Mr. Carey so much in his career.

A word of warning. It may be wise to limit the number of cycles you get through. If you don't, and then continue to not hit your desired averages, you run the risk of perhaps feeling as if there is no point in continuing. Or perhaps continuing whilst feeling disheartened and not wanting to concentrate fully on the shots you are playing.

### **Simplify.**

It would surely be easier to climb to the top of a pyramid one step at a time than all in one massive leap? Of course it would. In the same way, I'm sure you will find it is more effective to play a shot at a level that you are comfortable with and gradually build up by one or two difficulty notches at a time.

This often means that you will have to slightly simplify a shot if you are having difficulty succeeding at it. Here's how:

### **A moving target, and missing on purpose.**



I've found a fantastically successful way of helping my clients realign their aiming. Especially if they find they consistently hit one side of a pocket on a certain shot and feel it is impossible to improve.

It simply involves playing the shot and moving your aiming area to different distances left and right of the pocket, IE playing to deliberately miss the pocket. If you do this until you can strike to within an inch or two of the part of the pocket or cushion you are playing for, you will find the following:

- An increased overall accuracy in the shot.
- A greater ability in 'seeing the angle' of the shot due mainly to it now being more obvious if you are mistakenly aiming to one side of the pocket when down on the shot.
- Also you will find that this technique can serve to have 'short circuited' your body's, or mind's, tendency to strike to one side of the pocket consistently.

This works by the old habit being smashed into smithereens, or scrambled into intense confusion by the previous exercise. Much like the

effect that ripping it apart would have on an audio tapes' ability to function. This then allows you the freedom to aim properly without the old habit pulling you off course.

### **Move into four dimensions...**

There are only four ways that it is possible to change the dimensions in the shot you are playing to make your shot easier or harder. You can change the angle from the cue ball to the object ball or the angle from the object ball to the pocket. You can also change the distance of the cue ball to the object ball or of course the distance of the object ball to the pocket.

On this subject, I always remember what my junior school tennis instructor suggested to help me with my serve - he recommended me to practice until I could swing my racket consistently. Then to serve until I could strike the ball consistently. Then to serve until I could hit the ball over the net consistently. Then until I could hit the ball over the net **and** on the correct side of the court. Then the previous task **and** keeping the ball within the base line. Now I was at last ready to attack the service box!

By the way, when I was on this journey toward the service box, I naturally needed to refine my technique on occasion. This is also something that of course applies to yourself when refining your levels of accuracy.

In my experience, if you wanted to be refining your technique, in terms of time efficiency and lack of emotional furiousness it is definitely worth getting a top coach along to assist you. It can save you a heck of a lot of time.

### **...Then move into two dimensions.**

Next, if it is a positional shot you are practicing, then there are just two dimensions that will make your shot easier or more difficult. The direction the cue ball goes after striking the object ball, or the distance the cue ball travels after striking the object ball. I recommend you focus on one dimension at a time.

What I have found in my years of practice is that of the two dimensions, it is usually best to address the cue ball's **direction** first. This is because during the process of becoming good at controlling the cue ball's direction on your chosen shot, the pace required often becomes

obvious to you. Do this and prove it to yourself.....

So there you are! The above hard-to-come-by tools will help you to massively reduce your time invested in improving the amount you want.

### **Saving years of frustration.**

If you are finding that you still not yet finding it easy to get the result you want, your next step is to get technical and source some expert advice from a coach on how you can refine the mechanics of what you are doing. A fish can best see the bowl it is in if someone lifts it out.

**WARNING!!** If you try and do this type of work yourself, it can get very time consuming and exasperating if you don't know exactly what you are doing - believe me, I've been there on numerous occasions in the past myself!.

On the other end of the scale, if you are finding your practice shots ridiculously easy, just add a notch of difficulty so that you grow more as a player. You will then find that your concentration improves and that you enjoy your practice a lot more if it's not too easy for you.



## Training Guide Series.



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International Billiards & Snooker Federation

# The Champion's Bridge

**Understand it, feel it, learn it and remember it in a way  
your body will never forget!**

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Learn about the misconceptions and common errors.  
Transform your aiming ability through your bridge hand.  
Learn how to be ahead of 90% of all players.  
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Learn the secret way of vital practice.  
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The urban legend of centre cue ball striking.  
Making a 147.  
Be able to teach The Champion's Bridge Hand to anyone!  
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**[www.thesnookergym.com](http://www.thesnookergym.com)**

**Devised and introduced by Nic Barrow.**

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The intention of this series is to educate players, coaches, journalists and others who are interested in any or all of the departments of this fascinating sport.

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Nic Barrow.

Dubai.

February 22nd, 2005.

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How the bridge hand helps aiming.

Purpose of the bridge.

No cue or balls required!

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### **Section B: About basics – and anchors.**

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The Chair With Three Legs (no, it's not a Hollywood blockbuster!).

You are now ahead of 90% of all players.

How improving your bridge hand is like gentle jogging.

### **Section C: About the 'V' – and money.**

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### **Section F: About the red ball – and 147'S...**

Straight potting, angled potting and making that 147.  
You can now be a coach!

## Introduction.

The best way to introduce the subject of the bridge hand is to tell you straight away the whole point of the bridge hand.

This will be easy when you understand the two reasons Stephen Hendry MBE scored a 147 maximum break in 1995 World Championship semi finals against Jimmy White (also pocketing £147,000 as a bonus!).

These two reasons are:

1. Stephen delivered the cue on the line of aim each time. His ability to do this so well is made possible by being able to move the cue back and forwards in a perfectly straight line when addressing the white ball and when striking the white ball. This skill makes learning angles very easy because:
  - a.* If you cue straight and miss, you can remember where you were aiming, and aim better next time.
  - b.* If you know you will cue straight whatever happens, it forces you give maximum concentration to selecting the correct angle- otherwise you will miss!

2. Stephen chose to hit the white ball at the correct height and speed to gain the desired position of the cue ball each time.

These two abilities above would have been unraveled if Stephen's bridge hand was moving at any time (up, down, left or right). Or also if it was not providing a perfect channel in which the cue would move straight (assuming the grip hand was moving the cue straight).

Therefore we can say the purpose of the bridge hand is:

1. To give a 'V' shaped channel that can guide the cue straight at all times.
2. To remain motionless at all times.

To learn the most important parts to the bridge hand, we will be spending a lot of time in the first part without a cue or cue ball. Most of the training we need to do to get your bridge hand to a good standard doesn't require a cue. In fact it is easier to concentrate on these ideas without having to worry about the cue or cue ball at the same time as the bridge hand.

## **Section A: What you need today.**

First of all, we want to introduce you to fifteen year old Thamer Mustafa, our ‘coach’ for today (Pic 1).



Pic  
1

He is joined in by his assistant Ali Buffaroosha (Pic 2) and the rest of the training devices you can use to train for your perfect bridge hand.



Pic  
2

- Credit cards, playing cards or money notes.
- Cue.
- Cue ball.
- Red ball.
- A friend, perhaps you can both learn the bridge at the same time ...

## Section B: About basics - and anchors.

We will not be using you cue or any ball for a while, so without any equipment, we can go straight to the first step in Pic 3.



Pic  
3

Then fan out your fingers like a starfish as in Pic 4.



Pic  
4

In Pic 5, you will see the four most important parts of the bridge hand. We will call these the four 'anchors' of the bridge hand - one yellow, one blue, two red. It is absolutely vital that these four parts of the hand are touching the table at all times unless you require an unusual bridge from the cushion or over another ball etc.



Pic  
5

These four anchors do the same job as four chair legs do. If you imagine sitting on a chair with only three legs, the results could be quite dangerous or amusing! With four legs, you will be supported steadily....this is what our bridge hand MUST do for our cue.

Now we can go to Pic 6. Do the same as in Pic 3, and just bring the thumb tight and firm to the first finger as shown.



Pic  
6

In Pic 7 you see the next stage.



Pic  
7

With the thumb still tight to the first finger, raise the line of knuckles highlighted in red



higher, and then afterwards lower. Repeat many times until the up and down motion is natural to you. The motion is much like a car inspection lift that raises a vehicle on a level plane, before lowering on the same plane. At this stage in particular, it is very important to keep the yellow anchor touching the table bed at all times. This is because when you are learning something new, it is important to practice the correct skill until it is ingrained. This will get you the result five times faster than if you just get the skill right 80/90% of the time when in the learning stages.

As you go through this, remember what happens when you sit on the four – legged chair!

Pic 8 shows a common error.



Pic  
8

The thumb is not touching the top of the first finger, but maybe halfway down it. With this

thumb position, the only way you can make a high channel for the cue is to take the yellow anchor off the table (Pic 9 ) – not helpful.



Pic  
9

Pic 10 shows the benefit of the thumb at the top of the first finger – the yellow anchor can stay touching the table whatever the height of the bridge hand.



Pic  
10

If you have got this far, you are in front of 90% of most people who may quit if they faced with anything new - keep up the good work.

However, if you found all this uncomfortable and hard work, then I have something else in store for you!

Pic 11 shows the front view of the perfect bridge hand - and very importantly for you, the style of the fingers when forming the bridge.



Pic  
11

The style giving you a solid bridge hand, is if the fingers are straight or slightly bending down at their centre joints.

A weak bridge is shown in Pic 12 with the fingers bending up and wobbly. There is no benefit to doing this.



Pic  
12

Pic 13 also shows an unstable bridge as, even though three fingers are straight. The first finger, which is the most important for bridge stability, is bent and sure to make the 'V' of the bridge wobble when you play - especially on power shots.



Pic  
13

At this point, the eagle eyed among you may say:  
“Yes, but some players on TV do the same as in Pic 12!”.

What you may have seen is the 'Mouse Effect' in Pic 14.



Pic  
14

The two anchor fingers are straight and solid, with the index finger naturally curved upwards. Some players have done this ever since they started playing, but most players on the TV have all the fingers as in Pic 11 - we recommend you do the same to give maximum stability to your hand, and maximum accuracy to your cue. When you are on the TV, then you can do whatever you want.

All this exercising of the hand is something you can practice in many different places without needing a snooker table. See Pic 15.



Pic  
15

It may be quite uncomfortable on the hand to start with – in the same way that if you went jogging everyday your legs would ache a little for the first few days. Keep with it and soon it will be easy....

## Section C: About the 'V' – and money.

Pics 16 & 17 show why the above 'hand workout' is so important.

Pic 16





Pic 17



If you have followed instructions, you will have a bridge hand that gives a perfect 'V' shape between thumb and finger as perfectly as the rest in Pic 17 provides the 'V' shape for the cue. With this 'V', the cue will be guided in a straight and accurate line. Without it, the accuracy of your cue will not give you everything you have ever wanted from the game.

Let's go back and test that your yellow anchor is doing its job. This is where money comes in useful!

Put the money note under the yellow anchor – Pic 18.





Pic  
18

Now raise the height of the bridge - Pic 19.



Pic  
19

A quick question - in Pics 18 and 19, was your money tightly pinned to the table? It should have been, and we have a great test to confirm this is the case – Pic 20!



Pic  
20

If you raise and lower the bridge, the yellow anchor always must be in contact with the table bed. If it does not stay there at all times, your ‘friend’ won’t be able to take advantage of you as in Pic 21. This is because you will be pinning your money to the table as you should be – tightly!



Pic  
21

The pressure you use for the hand into the table doesn’t need to be so tight that it is not comfortable. As with all aspects of technique in sport, if it is causing you consistent discomfort,

it's usually wrong for you. This money test just helps to show the importance of yellow anchor stability.

Continuing, again use your money and your 'friend' to help you. When raising and lowering your bridge, pin the money note in the 'V' between your thumb and first finger at all times – Pic 22.



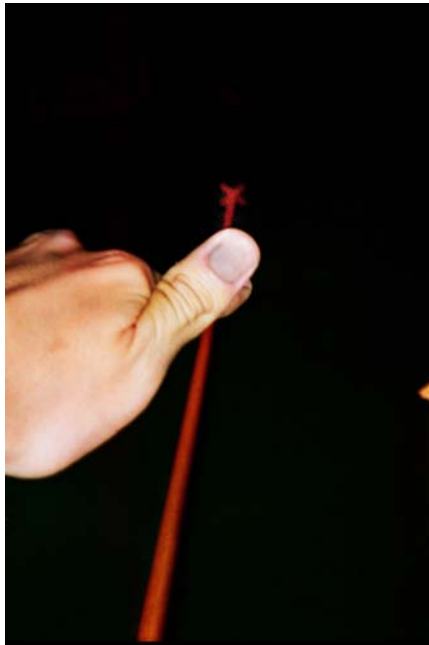
Pic  
22

If your friend can take the money from you at any time, your bridge hand has failed the test. Keep practicing until your 'V' is tight enough to keep hold of your money. After you have perfected this, we can go on to Pic 23.



Pic  
23

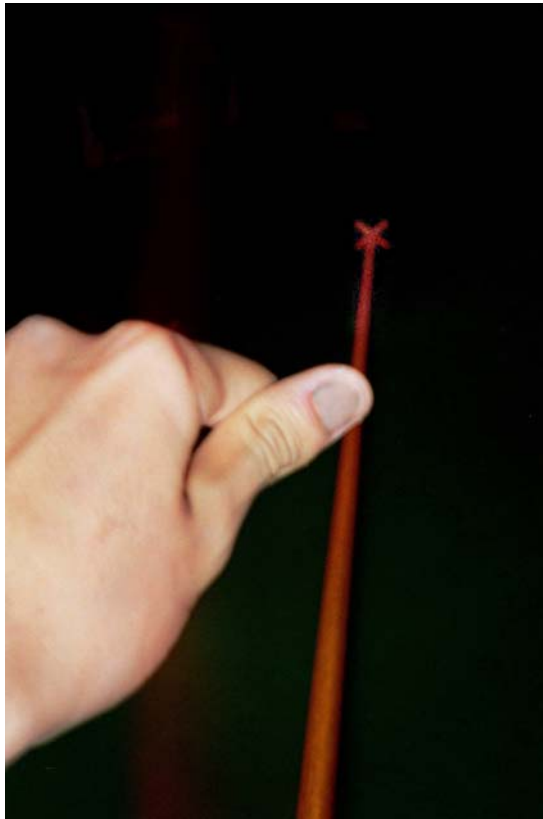
Here, we double check the 'V' of the bridge. When you get into position as in Pic 23, you should see the view in Pic 24.



Pic  
24

If your thumb is not doing its job, however, it will have crept down the first finger as discussed earlier. As you can see in Pic 25, this gives a much smaller, more shallow 'V' for the cue to travel in.

Compared to the rest 'X' on the table in Pics 24 & 25, the 'V' in Pic 24 is obviously much closer to this ideal.



Pic  
25

## Section D: Using The Cue – At Last!

Pic 26 – now you are ready to use your cue.



Pic  
26

Using a comfortable height of bridge, get into position *without* the cue ball. At this stage, all our concentration has to be on perfecting the bridge - balls will come later.

Whilst keeping the 'V' of the bridge still at all times, move your cue the full distance back and forwards - Pics 27,28,29.



Pic  
27

Pic 27: Backwards all the way to the thumb...



Pic  
28

Pic 28: The resting position...



Pic  
29

Pic 29: Forwards all the way to the chest.

There are three major components to this practice I must cover here. However, we are jumping forward somewhat to The Snooker Gym™ Training Guide Series on cueing and striking the cue ball.

The reason I want to cover it briefly here is that without comfort and confidence in moving your cue properly, your bridge hand will not be able to remain still.

You can see this all the time in the club you play in. Watch the regular players strike balls and as they do try to ‘rescue’, or ‘hang on to’ their cue from its upward, or wayward, path by lifting the bridge hand. This movement is almost always totally unconscious. It is therefore a great convincer for how much our unconscious mind wants to help us even though we are not aware of it – despite the daft things we do with our cue!

The three most important components for the beneficial completion of this drill are:

a). Move the cue in slow motion. It must take at least five seconds and no less to move the cue between the two extreme positions.

The reason for this is to magnify your awareness of *exactly* what your cue is doing, and



*exactly* what your cue arm is feeling – comfort and confidence or otherwise.

b). Pull the cue back until the tip is *touching the 'V' between thumb and first finger*. Not one inch away from the 'V', not one centimeter away from the 'V', but *touching the 'V'*.

Then push the cue forward until the cue is *buried into the chest such that it cannot go further*. Not resting against the chest, not one inch away from the chest, but *buried into the chest*.

The reason for this exactness is that your body absolutely has to know beyond any doubt whatsoever what it feels like to be at both extremes of the cueing cycle. If the body does not know this, there will be no ability to play the full range of shots in snooker.

c). When you have reached each of the extremes in the cueing position, you are to count:

“One, two, three.”, in your mind every time you reach each of the extremes.

The reason for this is to reveal if you are anything less than perfectly comfortable in both positions. If you are not, then that is the reason for doing the drill! If we can reveal that lack of

comfort, you will know a part of your game that has to be attended to with absolute urgency.

If you are not perfectly comfortable at both extremes of the cueing cycle, then there must be a change in your position at the table to allow this comfort to emerge. Without it, there is no hope to be all you can be on the table.

Find a coach to help you in this or move around a bit in your position until you are comfortable. Without getting into too much detail here, the basic reasons players are not perfectly comfortable in these two positions are:

Lack of total comfort when the cue tip is in the 'V':

- Gripping the cue like your hand is a vice, rather than if you were protecting a small bird in your hand.

- Refusing to allow the little finger and third finger of the grip hand to relax and open out as the cue goes back.

- Hip too close to grip, and blocking free and easy movement of the cue.

- Fear of pulling the cue back off the bridge. Forget about it – this is only practice.

Lack of total comfort when the hand is in chest:

- Surprise and amazement that this is how professionals play. It is how they play, so realize quickly that unless you follow through all the way to your chest, you will not have the power, smoothness and accuracy to get the results you deserve.

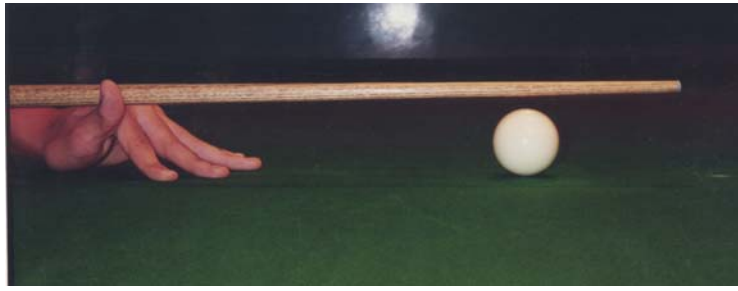
- Desire to wrench the cue back after playing the shot. This is not a bungee jump.

- Fear that with a professional follow through, the player will have no control over power and will hit everything at the speed of sound.

Follow through professionally, and practice endlessly to gain perfect control of the power you apply, when you want to apply it.

Repeat this drill at least ten times so you can get used to what it feels like to have your cue on this completely effective bridge hand you suddenly have.

When you are comfortable with this, we can then go onto raising and lowering the height of the 'V' – Pics 30,31,32.



Pic  
30

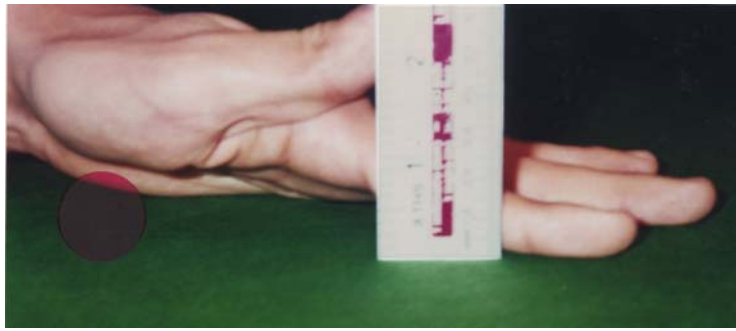


Pic  
31



Pic  
32

Also be sure to remember the importance of the yellow anchor. Pic 33 shows it is easy to get a high 'V' by lifting the yellow anchor - very dangerous, very amateurish and very wobbly!



Pic  
33

Pic 34 shows it is easy, more stable and more attractive to get the height of the 'V' by keeping the yellow anchor in the table bed.



Pic  
34

When you can keep the yellow anchor in the table bed and lift the cue as in Pic 30, you have the bridge hand of a professional player – well done.

However, we can promise at this stage that some of you will be finding it extremely difficult or almost impossible to lift the cue over the cue ball as in Pic 30 whilst keeping the yellow anchor in the table... no problem.

There are three causes and three cures for this:

1. It is difficult because you are not used to it and it is new.

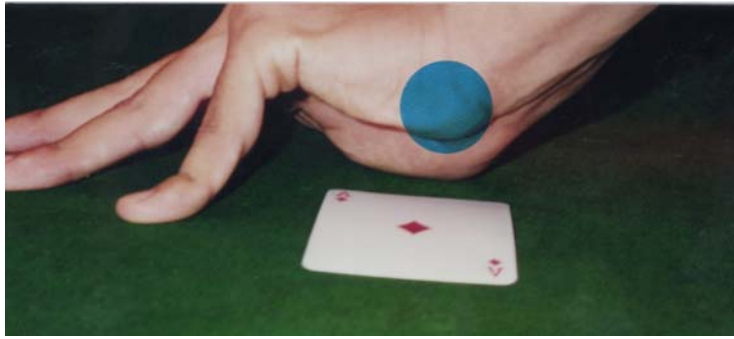
*Solution:* Keep practicing it until it is easy.

2. When you are on the shot, you are balanced with your weight too far forward. So much so that the whole task of the hand is to have the yellow anchor (Pic 33) and little finger preventing the entire weight of the body from falling forwards onto the table.

*Solution:* Practice standing at your shot with much less forwards lean, or in other words standing with your feet a little closer to the cue ball. This will make it easier to be able to control what you do with your hand.

3. It is just habit to raise the yellow anchor off the table.

*Solution:* Play at least twenty 'shots' (still not using the cue ball, so that you can concentrate fully on the bridge) with the blue anchor *off* the table. See Pic 35.



Pic  
35

When you can do this and lift the cue over the cue ball as in Pic 30, you have achieved excellence - well done.

When you have mastered these three solutions, you are now ready for the next stage in perfecting your bridge hand. You must now fine-tune the angle of the hand to give the very best 'V' for the cue.

Experiment by moving the cue fully back and forward with different angles of hand position so you can get a feel for which angle guides the cue in the straightest line.

This drill is illustrated on Pics 36 and onward...

In Pic 41, red is for the dangerous thumb pillow – look at the red circle and the muscle underneath it that is seen to be sticking out slightly. This muscle (or 'thumb pillow') is also highlighted in red on Pic 42, where it can clearly be seen pushing the cue away from the 'V' formed by the thumb and first finger.

Pillows are comfortable, but sometimes inconvenient.

Pic 36 shows one possible angle of bridge hand, with Pic 37 showing what it looks like from the eyes of the player.



Pic  
36



Pic  
37

Pics 38 & 39 show another angle.





Pic  
38



Pic  
39

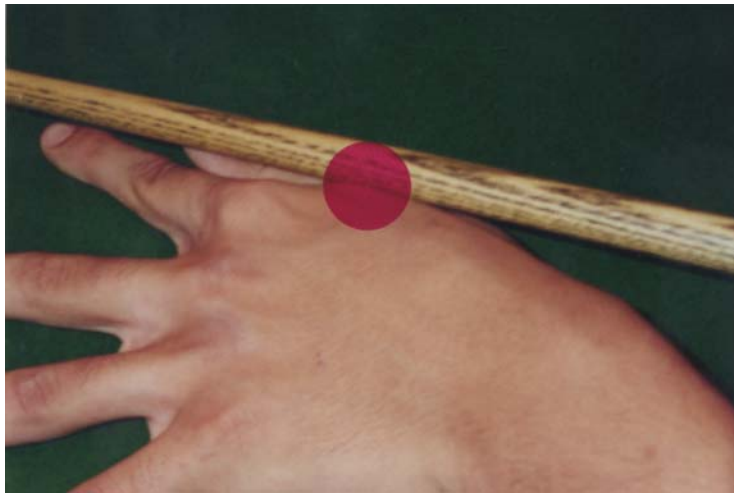
In pics 40 & 41, yet another.



Pic  
40



Pic  
41



Pic  
42

If the cue is pushed away from this ‘V’ it will be impossible to cue straight and accurately because the cue won’t have a clear and easy channel in which to sit. Do this and see for yourself.

In Pic 41 you can also see a very shallow ‘V’ for the cue - not helpful.

The best angle of hand is something close to Pic 38. It is comfortable, will give you a good ‘V’ and is easy to keep still.

## **Section E: Using the cue ball – at last!**

Now you are ready to use the cue ball!

After all this body building of the thumb, I am sure you are now itching to start hitting some balls. Only now that you are playing with a professional bridge hand *without* the cue ball, will you really be able to integrate your new bridge hand skills *with* the cue ball.

Most players never get their bridge hand sorted out properly, yet you are doing something in twenty minutes that will give you the foundation for life that even some professionals lack. Keep up the good work.

The first thing we must do to integrate our abilities is that which our coach is doing in Pics 43 & 44.

Pic 43



Pic 44



Start by striking the cue ball into a pocket at varying speeds just to practice the feel of the shot with your new, professional bridge hand. It may be best to practice this with not too many people around - people who don't understand what you are doing may think you have forgotten to put other balls on the table!

You can see from Pics 43 & 44 that the bridge hand is in exactly the same position both before and after the strike of the cue ball.

If the hand is not in the same position after the cue strikes the white ball, there could be a number of reasons for this:

1.*Reason:* All your concentration is totally on getting the white ball in the pocket and you have lost awareness of the bridge hand as a result.

*Solution:* Put the cue ball closer to the pocket. This makes it easier to concentrate on whether the bridge hand stays still or moves as you hit the ball.

2.*Reason:* Your cue is not moving back and forwards in the straight line, or you have no trust that your cue will move back and forwards in a straight line. In either event your bridge hand then frantically tries to move around to force the cue to stay in a straight line, or on the correct line, or at the very least not on a wonky line !

*Solution:* Play the shots very, very slowly so you do have enough control over the cue that it can move straight.

When moving the cue straighter, increase the speed a little and practice until you can again cue straight.

Keep gradually increasing the speed until you can do so with enough trust in your cueing that your bridge hand stays still. If necessary play some imaginary shots without the cue ball to help get the cue moving straight at speed.

*3.Reason:* When you strike the white, the cue hits the table cushion, raises off the bridge and the bridge hand then lifts in a desperate attempt to maintain connection with the cue!

*Solution:*

Firstly, if you find it easy to change from dropping your cue on the follow through, to cueing in a level line when you strike, do so.

After all, the cue is not a saw and you are not attempting to cut your way through the cushion.

Secondly, when you are cueing up at the cue ball, lift the cue one or two centimetres higher. This will make sure

there is a slightly larger gap between your cue and the cushion.

Even professionals drop their cue on impact sometimes. In addition, the cue does get fatter as you push it through such that even if you are cueing perfectly horizontally the cue will automatically move closer to the cushion anyway.

One mistake club players in particular make on this subject is to believe the hype that the cue should be about three microns or less above the cushion. Doing this means that their mind cannot pay full attention to striking the cue ball – it is more worried about *not striking* the cushion rail.

I usually recommend a player to keep their cue anywhere from one centimetre to one chalk cube height above the rail until they are at a good amateur level and have gained the unconscious, automatic, straight cue delivery.

When you can hit the cue ball at speed into the pocket with the bridge remaining still, it means you have.



- A good bridge hand allied with a good delivery.
- Confidence in your ability to strike the cue ball at the exact height you are aiming. Well done.

We can now go on to a more demanding exercise in Pic 45.



Pic  
45

Now that you have a still, professional style bridge hand (which you will have if you have done all the exercise so far) we can look at the finer points of aiming the white ball exactly where we want.

There is a big trap to warn you about here. If you have previously had a very ineffective bridge hand, it is almost certain that your aiming has also been ineffective.

Why? Because it is impossible for your eyes to be free to work out the correct angle to your shots if the bridge hand is wobbling about all over the place. In fact, if your bridge hand is disturbing the cue from moving perfectly, your eyes will certainly until now have learnt the wrong angles to hit the white ball. They were forced to learn these wrong angles to make up for the mistakes cue was going through because of the bridge hand. This effect is known as unconscious compensation.

In effect this means that now you have a perfect, or near perfect, bridge hand and your eyes will quite probably be aiming incorrectly... No problem.

All we need to do is the exercise in Pic 45. Make a small mark with chalk on the top cushion directly behind the black spot. Put the white on the brown spot. Aim the cue ball to the chalk mark on the top cushion.

Play this at different speeds. Strike the cue ball at different heights. Notice if your cue ball touches the mark or if it is even as little as one

millimetre to the left or right of the mark. If you want to think you cannot easily know if the ball strikes a matter of millimetres to either side of the mark, you need to know that extra concentration on what is happening will multiply your awareness of what is going on.

Keep doing this until you can keep your bridge hand still and hit the chalk mark with the cue ball. When you can do this (and there are professional players who do this for more than an hour at a time), you are doing something that hardly any club players in the world know how to do properly. That is, you can keep your bridge hand still, and aim and strike the cue ball in a straight line. All at the same time. Excellent!

The next stage on from this is to hit the chalk mark and bring the cue ball back off the cushion in a straight line back toward yourself. Assuming you went through the previous exercise to its conclusion, you will have seen that the cue ball didn't always come back to you in a straight line even if the chalk mark was hit.

This means that you put a little bit of side spin on the cue ball. Essentially, the main practice for you in this situation is to put the baulk colours on their spots, with a pair of reds between yellow and brown and another pair between

green and brown. You should now have seven balls that have equal gaps between themselves.

Your task now is to play until, with straight cueing, you are able to strike the chalk mark in the top cushion and bring the cue ball back with the correct amount of left or right hand side to purposely hit any ball you choose. Do not attempt to bring the cue ball back across the brown spot until you can strike the other balls at will, and with consistency.

This process is known as mastering the errors before mastering the solution. It gets you results, fast.

In addition, the table may be off level. The only way to check is to strike the cue ball on to an object ball on the brown spot until the object ball strikes the mark in the top cushion. Assuming you have played the shot at a speed where the object ball finishes slowly back in the 'D', you will see if the table is carrying the object ball as it should do.

Do not make the mistake of most players who believe they are God's gift to centre ball striking. To test the table level, these players insist on insisting that they are within one micron of centre ball striking on every shot they play. You can see them striking the cue ball

across a table and then assuring anyone watching that they now know if the table is level or not. Only God knows that at this stage – because no scientifically reliable test has been undertaken!

No player in the world has ever had a monopoly on striking centre ball all the time, so be sure to make the scientific test before ever giving judgement.

## **F. About the red ball – and making 147's...**

Aiming just the cue ball on its own is one thing. Pic 46 shows you quite another – using the object ball!



Pic  
46

The process is the same. Start off playing only straight shots, for example in the middle pocket. Play them slowly until you can pot the ball while keeping your bridge hand still at all times.

If your bridge hand is still, your cueing is straight and you pot the ball, your aiming is perfect. If you pot the ball and your bridge hand moves, you will never know if your aiming is correct or if your bridge hand pulled your cue onto the correct line at the last moment.

Practice this stroke at different speeds with different distances from object ball to pocket.

When you are happy you are making good progress here, you are ready to go onto angled potting. Again, start with slow pots and small potting angles. Then build up the speed of the stroke and the size of the angles.

When you are a little more comfortable with the angled pots, you are ready to go onto what you see on Pics 47 & 48 - starting games and making 147 breaks!

Have fun...



Pic  
47



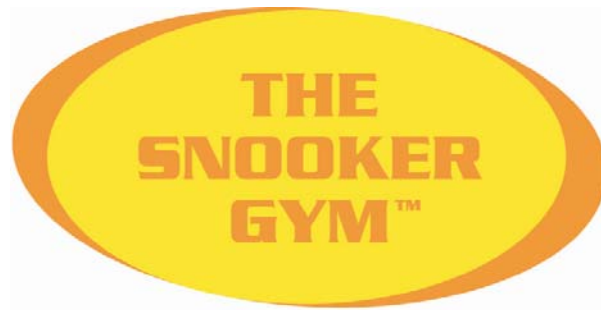
Pic  
48



## **Finally.**

I recommend that you go through is entire booklet on a further two occasions over the next two to four weeks. This will give your bridge hand a much better chance of remembering all the important points here, and ensure that your new good habits are kept securely all the way into the future.

You will now be able to see the common faults that we have discussed here, when watching your playing colleagues down at the local club. You may even be able to earn some money by coaching them!



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## Welcome to The Snooker Gym™ Training Guide Series.

The intention of this series is to educate players, coaches, journalists and others who are interested in any or all of the departments of this fascinating sport.

For the Training Guide Series, snooker has been taken down into its' main constituent parts, each one of which has its own edition in the series.

Each guide will give you a stated objective on the front cover, letting you know what you will gain from knowing and applying the information inside.

Within each guide, you will first find a list of headings for an overview of the subject. Underneath each heading will be a rough description of what you will get from each section.

Each section goes into the nuts and bolts of the game, so that anybody wanting to, can derive a fully comprehensive understanding of the game from the ground up. This is particularly useful for individuals studying to become a Snooker Gym™ Instructor, and forms part of the coursework for that programme.

Youth, others learning the game and those still improving their amateur status will also benefit highly from understanding each part of the sport.

This level of detail is NOT, however, suitable for professionals and high level amateurs about to play matches. While useful for pre tournament checks or pre season study and performance development, the professional should always ask for what purpose they need the detail. Their job is to concentrate on the business of winning, and taking their game down to its' finest components just before competition can take their edge off the focus on results.

Other psychological and physical preparation methods found in other tools available from The Snooker Gym™ are more suitable for players of this standard before matches.

It only leaves me to welcome you to this bountiful garden of knowledge I have been fortunate enough to discover, and wish you well in your quest for the kingdom of snooker performance.

Nic Barrow.

Dubai.

October 11th, 2004.

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So easy, yet so difficult.

### **Absolute Essentials.**

Without these hidden requirements, mastering this subject is impossible! The why and the what of these essentials - all covered here.

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The upward spiral of potting and position.

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50% extra performance for pennies per month...

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## **Introduction.**

Out of all the areas of snooker that clients ask me about, positional play has to have the biggest number of misconceptions. Yet it is the easiest of all subjects to understand if there is someone competent to guide you through the process.

Once you understand a few basic principles, the whole topic falls into place. The biggest mistake most people make in wanting to learn position is not realising that it is impossible to learn good positional play without having the following essentials firmly in place.

Positional play is also one of the most rewarding subjects within the game to learn because the improvement you will go through when you have integrated the concepts will be truly astounding. Whole new horizons in the game will open up to you and it will suddenly become clear how the professionals on the TV are going about their work. This will give you much more enjoyment and learning in both watching and playing.

## **Absolute Essentials.**

Before tackling this vital part of the game with hopes for effective learning, one absolutely must have in place a good standard in the following basics.

If you do not have a solid, reliable method in each of these areas, I do not recommend you do the exercises in this manual yet. By all means read it for your general knowledge about the game but do not go further than that.

Solidify what you have first, then build on top of it by learning positional play with the best possible foundations in place.

### ***Pre shot planning.***

So the shot is played in the mind before being played in reality.

### ***Walking in to the shot.***

When walking into the shot, keeping the body on the line you have already selected at the shot planning stage.

### ***Bridge hand.***

To keep the cue on the line selected at all times through aiming, striking and follow through.

### ***Stance.***

To remain balanced during the stroke so that all the various components of the shot can get on and do their jobs properly.

### ***Grip.***

So the cue is delivered in the direction intended by the mind.

### ***Follow through.***

So that the player gets feedback on whether the cue is going through in a straight line. Also to ensure a solid, consistent strike of the cue ball.

### ***Centre ball striking.***

When playing the cue ball from the brown spot up and down the spots to test central striking ability, the player should have the ability to strike:

- The cue ball up the table to a chalk mark placed exactly in the centre of the top cushion.

- The cue ball back down the table to the brown spot in the same straight line that the cue ball travelled down the table in!

### ***Straight potting.***

The foundation of all potting and positional play. Without this step, it is pointless going further.

### ***Angled potting.***

To improve at anything, you need to reduce the variables so that you are able to see your

mistakes. The biggest variable in detecting where the cue ball is going will be whether the object ball went into the centre of the pocket or not.

If you did hit centre of the pocket, you will get clear feedback on where you aimed to strike the cue ball and where you actually did strike the cue ball.

If the object ball was potted but not in the centre of the pocket, there will be distortion between the positional result you should be seeing with a clean pot, and where the cue ball went. If you miss the pot, there will be no learning relation between which height and speed you hit the cue ball and where the cue ball went. Time, and a learning opportunity for your positional play, will have been lost forever.

## **Positional play makes it easy.**

Having the ability to be automatically able to play positional shots correctly will mean you are able to focus solely on potting the ball without diverting your mind to the secondary priority of positional play. Your potting will now be much more consistent.

## **Helps concentration.**

Players on the TV are not thinking of position like you think. For them, standing behind the shot before playing it is the time that they have planned where they want the cue ball and mentally rehearsed playing it in the correct way. This means that when they are on the shot, the positional side of the stroke is already handled. They can then put their full attention (ninety percent or more) on potting the ball. cursory checks will then confirm they are striking the cue ball in the correct place for their desired position.

The mistake virtually all non-professionals make is to be working out how to make cue ball position when they are down on the shot. This guarantees failure and no improvement. So if you want these two dead ends, carry on not planning your position every time you are standing behind the shot.

## **Know it all inside out.**

Assuming a player does have a reliable potting ability, the following process would have them

learn the concept of positional play inside out, in a way that their mind and body can remember forever:

***Go through 1-10 height on the cue ball.***

I have the client imagine a vertical line through the centre of the cue ball, and a scale of one to ten on this line, with one being the lowest part of the ball, five being the centre of the ball and ten being the high point. For the whole of this exercise, the client will only use this vertical line of strike on the cue ball and use no side spin at all. It is very important to keep these two areas on the cue ball as separate subjects, as we will discover later on, and in addition side spin is infinitely more complex than central cue ball striking, so will be covered in a different training guide.

***Striped ball demonstration, including the drag shot.***

Then I would take either an American Pool ball or a striped training cue ball so that the spin of the cue ball is visible. I would play just the cue ball up and down the table with varying levels of backspin on the cue ball. This demonstrates how far down the table the cue ball remains spinning backwards before friction takes its' course. At this

point, the backspin dissipates and all that remains is the normal forwards rotation of the ball as it continues its' journey.

This is the time to mention the drag shot to the client. The drag shot is where backspin is imparted on to the cue ball, often by striking as low as level one, but the object ball is a far enough distance away from the cue ball that all the backspin has dissipated from the cue ball before impact with the object ball. The cue ball will then, despite having been played with back spin, obviously roll forward as if it had been played with top spin - a lovely snooker paradox.

The exact circumstances when a drag shot is required are not necessary to be covered now. However, understanding the concept of a drag shot is important for the client to know at this stage.

### ***Pot the blue in the middle.***

The client will then make a light chalk mark in the cloth to make sure each shot played was consistent from a learning and feedback point of view. They would then go through the following drills when potting the blue in the middle, until learning benefit was gained from each drill.

1. Same speed, different heights on the cue ball.

2. Same height, different speeds. This is in a sense drag shots revisited, in that eventually the player will hit a ball low and then see the cue ball rolling forward when it hits the object ball. It is important that the client keep playing varying shots until they get this result, as they then have the ability to understand and play a drag shot – a vital part of a players' positional armoury.

3. Same height and speed, different distance to red. This is a variation on drills one and two.

4. Try the SAME shot ten times, playing level five on the cue ball to generate some kind of stun follow through effect. The differences in results from this drill prove variations in your shot planning, cueing and ability to exactly deliver the shot you have visualised. Even the top professionals will never get the cue ball in exactly the same position if they were to play this shot ten times. When you know that it is possible to plan your shot perfectly and not execute it perfectly, you will then know to search intelligently for where to improve the last shot you played – should the planning



have been better or should the stroke have been better?

### ***OPP.***

When the player has gone through steps one to four, I will always mention that from now on they should practice their positional play by using the Observe, Predict, Plan (OPP) model.

For this you must set up a simple shot that you can easily make and gently mark the cloth with chalk, so you reproduce exactly the same shot time after time.

*Observe* where the cue ball goes when playing different heights and speeds with the cue ball. Continue for five or ten minutes. Observe means you are not allowed to have any target or any goal for your positional play, so if you do have a place in your mind where you want the cue ball, you are *not* in the Observe phase and *not* following instructions!

*Predict* where the cue ball will go if you play certain heights and speeds with the cue ball. Commit to playing the shot in a certain way, use what you learnt in the Observe phase, and therefore Predict where you think the cue ball will end up with this strike you have committed to

play. Repeat the same shot from the Observe phase for another five to ten minutes.

*Plan* where you want the cue ball to go, remembering what you learnt from the first two steps, and then work out how you need to play the cue ball to get your desired results. Again, make sure both balls are in exactly the same position as in the first two steps. Repeat for as long as you are learning from the shot, and back pedal to Observe or Predict if you are not totally clear on what you need to do to get the result you want.

### ***Side makes no difference.***

The biggest mistake a player makes in learning positional play is to go *with* their human instincts and apply side spin to ensure the cue ball goes in the direction of the side spin applied. Unfortunately, our human instincts push us in completely the wrong direction in this regard.

It becomes obvious that side spin does not influence the direction of the cue ball, if we consider the following three facts in comparing cue ball side spin between contacting a cushion and contacting another ball:

A. A ball is much smoother than a cushion surface, and can not be gripped by a spinning cue ball on impact.

B. The contact surface area between two balls is much less than between ball and cushion, again giving less chance for any friction to take effect.

C. The amount of time that two balls contact each other for is also much less than the time the cue ball spends embedding itself in the stationary cushion before being thrown off again.

The exercise I demonstrate to prove that side cannot change the direction of the cue ball is to go through the following sequence:

1. Line up a straight blue pot in the middle pocket, marking the exact position of the cue ball for instant, accurate repeatability.
2. Ask the player to stand directly behind the pocket I am aiming at, and tell me three things after each shot:
  - a. Were the cue ball and object ball lined up perfectly straight toward the *exact centre* of the middle pocket?
  - b. Did I aim and strike the cue ball with maximum side spin?
  - c. Did the object ball go into the centre of the pocket?
3. Before I play the shot I ask the client to tell me where they think the cue ball will go when I play follow through with full side spin. They will usually estimate anywhere

from six inches to three feet away from the middle pocket on the same side of the pocket as the spin I am playing.

4. I then keep playing the shot until I pot it into the centre of the pocket. Even with my playing experience in the game, it can still take me up to three or four attempts to get the object ball in the exact centre of the pocket.
5. When the object ball enters the centre of the pocket, the cue ball is then guaranteed to remain on the aiming line of the pot. The client is then left to wonder how the cue ball can not deviate from straight when I had put all that side on the cue ball.
6. I repeat with stun and screw back until the client witnesses centre pocket potting and non deviating cue balls in each scenario.
7. The client is then asked where they think the cue ball will go if I were to play with top spin or screw back or stun and maximum side spin. I keep asking until they can immediately answer with certainty that the ball will go in a straight line, or remain stationary if a stun shot is played, no matter how much side I apply.

Having said all this, there are a handful of situations in the game where sidespin can influence the position of the cue ball very marginally. These situations require such a high standard to execute and such refined awareness to detect that I will only go through these situations with professionals or high level amateurs.

This caveat was added to the manual partly for clever professionals who would feel an important consideration was omitted. It was also added for the benefit of English Billiards exponents who do use side in the execution of many shots, but in situations that do not regularly come up in snooker. Both these parties can rest assured that we do not insist they play with centre ball all the time if they feel it would limit their professional shot making repertoire!

## **The difference a cue can make.**

The weight, tip diameter, type of tip and general build quality of a cue have a dramatic effect on the power one can apply to the cue ball. If you have a solidly made cue with a secure ferrule and well played in tip, you can easily get

30% -50% more power from the shot than if using an inferior product.

Your ability to apply spins to the ball will also be hugely impacted depending on the quality of equipment you use. Bear this in mind before buying the cheapest cue you can find - the cost of a good cue spread over a lifetime of enjoyable use is only pennies per month.

### **When you are ready...**

After playing level one height on the cue ball when potting balls in the middle pocket, if you can pot the ball and screw the cue ball back into the middle pocket five times out of five, you are ready to tackle position shots on angled pots.

### **The Perfect Stun Angle.**

Before we get into angled potting, it is vital to understand the concept of the perfect stun angle. When you imagine a cue ball and an object ball in outer space with no table, this concept becomes clear. Think of the cosmic cue ball approaching its object ball for a full on contact. The cue ball

would remain stationary, and the object ball would simply shoot off into space never to return.

Now think of the cue ball approaching the object ball on an off straight angle. At the moment of impact, the two balls are aiming in one direction only. On a plan view, they would appear to be like a figure of eight. The cue ball would go off at a right angle (or square angle, or ninety degree angle, or *perfect stun angle*) to this direction, because that is the path of least resistance.

Think about it, the cue ball could not go through the object ball and forward of the perfect stun angle, nor could it come behind the perfect stun angle if there were not some other force acting on the ball. So when we are back on earth and have a real table on which the balls are reacting, we have the same effect. The only difference is that there is one, just one, force that can take the cue ball off the perfect stun angle. This force is spin – back spin or top spin, and it is the only reason we are able to control the direction of the cue ball.

If the surface of the table were frictionless ice, there would only be two cue ball reactions possible on any shot played with any amount of back spin or top spin. Those are a stun shot or a deflection at the perfect stun angle.

## Side spin *still* makes no difference.

I always remind clients at this stage that even though the pots have now become angled, side spin *still* makes no difference to the positional destination of the cue ball, unless of course the cue ball strikes a cushion after contacting the object ball.

I then set up a simple pot in the middle pocket but with a three quarter ball angle. I play a slow shot with follow through and put another ball on the cushion where the cue ball makes contact with it. I then repeat the above steps, but only play follow through and only play slow shots. This is enough to convince the client that even on an angled pot, side spin makes no difference to the path of the cue ball. This is because the cue ball will still hit the other ball on the side cushion with any amount of either side applied to the cue ball.



## **Six angled potting positional factors.**

The following six variables, arranged in three logical pairs of two's, are the only information a professional or any other player for that matter, needs to know to be able to play a perfect positional shot. This is assuming the player has built up the experience and technique to deliver the shot as planned.

1. Angle from ball on.
2. Distance from ball on.
  
3. Desired angle from next ball.
4. Desired distance from next ball.
  
5. Height to play on cue ball.
6. Speed to play cue ball at.

This all means that a lot of shots are impossible. Learning the frontiers beyond which a positional shot is impossible, is the fastest way to improve your positional play. On each shot there is a path the cue ball will take if you play full follow through and a path on the other extreme that it will take if played with screw back. The

range between these two extremes is the only area in which the cue ball can be placed. Once this range can be visualized on the table, it is then easy to approximate the height on the cue ball that needs to be struck to get the desired direction out of the cue ball.

When it comes to practicing angled positional shots, keep in mind the following point. If you move the cue ball one inch before playing a shot, think not of one inch, but the percentage change in potting angle that this represents. You will learn about positional play much more quickly by marking a specific point on the table on which to replace the cue ball consistently. Less practice variables equal more time leverage.

The best positional shots you can apply your initial practice time to are top spin and back spin on Blue, Pink & Black. Apply the OPP model to learning the direction and the speed of the cue ball on these set shots.

While practicing these shots, you will notice that the behaviour of the cue ball after striking the object ball can vary. Understanding the cue ball throw effect at different potting angles is vital to your confidence as an expert of positional play. With clean balls and a new cloth, this arcing effect of the cue ball is most noticeable.

The arc is caused by the cue ball automatically going off at the perfect stun angle, the top or back spin then pulling the cue ball off this line and into another direction. The cue ball is only in a process of arcing when the cue ball is spinning faster than it is rolling. The excess friction continues to arc the cue ball until it is simply rolling like a tyre across tarmac, with all excess spin depleted.

## **Gauging pace of shots.**

One of the best ways to improve your ability to gauge the pace of shots is to apply the OPP model to the speed of a straight pot played with follow through.

Another great way to improve this is to put the cue ball on the brown spot and apply the OPP model to the pace of striking the cue ball up and down the spots. Both these shots give a great return on the time invested in practice.

## **Centre cue ball striking, or a trace of side.**

The perennial question – do the professionals play centre ball striking all the time, or do they play angled pots with one or two millimetres of intentional side spin on the cue ball?

A lot of the top players, especially those who are the most instinctive, do play with a trace of side whether they are consciously aware of it or not. Assuming their eye sight is able to see the centre of the cue ball, the main reason for this deviation from centre is a sense of comfort in being able to aim for the potting angle.

If the object ball is to be aimed off to the *left*, a player may feel comfortable putting a trace of *right* hand side on the cue ball. This is not to influence the position of the cue ball in any way, only to be in their comfortable mode of aiming.

The other important question is what a player should do when learning the game. I suggest practicing until able to aim using central cue ball striking until reaching a proficient standard with this method. The player will then usually opt to keep that style of aiming because they find it simplest, more reliable and more accurate.

If the player still prefers to play with a trace of ‘aiming side’, I would let them do that. They would then have the flexibility to use either technique if it was called for.

## **Side spin.**

### ***Overview.***

This is such a complex subject that it needs this section on its own to just skim the surface. Mastering positional play with centre cue ball striking is a long enough process without confusing the issue too early with the subject of side.

The angle the cue ball reflects from the cushions with centre ball striking should also be learned and absorbed thoroughly first. If you don't yet already know the exact angle the cue ball should come off a cushion without side, there is no need to make things less easy by adding side spin to what you are concentrating on.

### ***Aiming the potting angle with side.***

This skill is covered in the manual on aiming, and it is assumed you have this ability to a high

level before attempting to use side spin to your positional advantage in match situations.

### ***Off the rail is the only time...***

The only time you will ever be forced to use side is if the angle off the cushion with centre cue ball striking will not be able to get you to the position you desire.

This distortion in cushion rebound that is caused by sidespin is only needed on a very few occasions (usually less than half a dozen) in a professional frame of snooker. This means that a mystery surrounds the fact that many club players seem to want to try every other shot with stacks of side.

There are two types of side spin. Running side is where the angle and speed of the cue ball increase after hitting the cushion. Check side is where the angle and speed of the cue ball decrease after hitting the cushion cloth. The newer the cushion, the less distortion is possible due to the fact that the cushion is more slippery and will grip the cue ball less.

### ***With one exception...***

If you are a good enough player to pot a ball with maximum side spin at a slow speed, then you

will be able to do this experiment for yourself. If you are not, you will have to take my word for the effect I am about to describe, or find someone else who can demonstrate it.

1. Line up a blue in the middle pocket with a 'half ball', or thirty degree, potting angle.

2. Play the shot at pocket weight with maximum right hand side, and six out of ten height on the cue ball (five being central and ten being the highest part of the cue ball), until the ball pots in the exact centre of the middle pocket.

3. When it has done so, lightly mark the final destination of the cue ball with a chalk mark.

4. Repeat steps two and three but with maximum left hand side.

5. You will see that the destination of both balls is about two inches apart. If it is not, the only reason is that you are not putting enough side spin on the cue ball and need to venture so far out to the edge of the cue ball that you think you will surely miscue. In fact, it would do you a power of good to increase the amounts of side until you do miscue. At least then you will have intimately learned the limits of what is possible, which is the best way of being comfortable at the limits.

6. When you play the same shot but with centre cue ball striking, you should see the cue ball nestling nicely in between the two extreme positions that were arrived at with side.

This shot is only for a player who has complete knowledge of where the cue ball will go. If you don't, then this rarely needed gem of a shot will never help you because you will never know for sure if you do need it.

The only time it would be used would be if you were forced to play a shot at more or less pocket weight. In addition, where the cue ball would land if you did so would need to be just one or two inches off perfect which lost you position totally.

For example, if you knew that by just playing follow through, the cue ball would land on the wrong side of another object ball, you can play with the appropriate side to widen the cue ball angle to land on the correct side of the obstructing ball.

The angle becomes widened because the cue ball is still spinning furiously after it strikes the object ball, thus undergoing a gentle swerve effect. It is this spin that carries the cue ball a couple of



vital centimetres to the left or right of its natural destination.

The opportunity for this shot will only be needed by top professionals on average about once per match, and high level Billiards players who are good enough to be aware of situations where side is the best option for almost imperceptible changes in ball reaction.

### ***To use...***

Side can be very useful in certain situations and there probably hasn't been a 147 break made that did not need side somewhere along the line to manipulate the cue ball or recover from a slightly imperfect positional shot. At this top level of the game, the pros use side sparingly, even though they are perfectly capable of potting most shots easily with side.

This is a sensibly cautious approach that separates the need to play side, from the regular bread and butter shots, which are generally played centre ball.

### ***Or not to use...***

At the end of the day, you do not need to use side spin that much to get very good playing results. You have to be a very good player to

understand how to compensate your pot aiming, and the amount of spin required when playing off centre. Every table is different, and the effects of side vary in infinite ways across the wide variety of table conditions that exist.

A sensible conclusion is to copy what most of the pros do. Use centre ball as a rule, and side for a specific reason only when necessary.

### ***And finally, Automatic Side.***

Understanding this phenomenon will help many a close up spectator unravel a great mystery, and help many a player put their mind to rest about a phantom fault they think they have.

Place a red twelve to twenty four inches from a black pocket, and in line with the blue spot. Place the cue ball on the baulk line, such that the cue ball is the same distance from the side cushion as the red is from the same side cushion.

If a player were to play perfect centre cue ball striking with stun, it would appear that there was running side on the cue ball as it hit the top cushion somewhere underneath the black spot.

The reason for this apparent impossibility is Automatic Side. When the cue ball strikes any object ball on an angle, the cue ball has to stop momentarily before changing direction. In this

split second, the cue ball behaves like a cog wheel. The part of the cue ball in touch with the object ball remains virtually stationary, while the part of the cue ball furthest from the object ball turns in the new direction of travel.

The effect is the same as if a phantom player were applying side to the cue ball on impact. Hence the appearance of side even if a player has played right down the centre of the cue ball. Of course, the player must be a good enough player to know if they actually have struck the centre of the cue ball to know how much Automatic Side has been applied to the cue ball.

Knowing this of course means that you do not have to play side to swing the cue ball around the angles on this shot anymore – the balls do it for you!

## **Close, delicate positional shots.**

The foundation for playing subtle finesse shots in the game is being able to pot the object ball at pocket weight. The best practice for learning to do this is to set up a consistent shot that you can pot comfortably. Then keep playing the shot, with the target being to leave the object

ball as close as possible to the pocket without potting it.

When you can get the object ball to within inches or centimetres of the fall of the pocket and feel you are in command of doing this, you are ready to start potting the ball at pocket weight. Here, the target is to play the shots so that the object ball falls over the edge of the pocket as slowly as possible. If you can get it to wait at the edge of the pocket before dropping, even better!

This is such an effective practice because it teaches the minimum operating requirements for object ball speed. From this standard, you can then work upward in potting power until you are comfortable using the full range of playing speeds. You will then find it easier know how much speed is required for a shot, and be able to accurately reproduce this speed as planned.

The biggest mistake you can make is to think that snooker is a game of strength, force and power. Ninety per cent of all shots played by professionals are played delicately, and if you could swap bodies with one of them during a match, you would feel how silken smooth and softly played all their shots really are.

There are many delicate shots that need to be played on the table. These, and the appropriate way of playing the cue ball to accomplish them, are covered in other guides in the series.

## **From a Black Off The Spot.**

Positional play from the black is the anchor shot for all break building and other positional shots on the table. Because of the confined space around the black spot in which to manoeuvre the cue ball, this is also the best area to make fine adjustments to one's positional repertoire.

The routines you play should be broken up into three distinct areas. With the cue ball above straight on the black, below straight on the black, and finally straight or just off straight. These areas, and their most effective practice drills, are presented in the manual on practice routines.

In addition to this you can make some routines up yourself. Simply apply the OPP model to your set ups and watch your steady progress toward effortless mastery.



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Devised and introduced by Nic Barrow.

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## Welcome to The Snooker Gym™ Training Guide Series.

The intention of this series is to educate players, coaches, journalists and others who are interested in any or all of the departments of this fascinating sport.

For the Training Guide Series, snooker has been taken down into its' main constituent parts, each one of which has its own edition in the series.

Each guide will give you a stated objective on the front cover, letting you know what you will gain from knowing and applying the information inside.

Within each guide, you will first find a list of headings for an overview of the subject. Underneath each heading will be a rough description of what you will get from each section.

Each section goes into the nuts and bolts of the game, so that anybody wanting to, can derive a fully comprehensive understanding of the game from the ground up. This is particularly useful for individuals studying to become a Snooker Gym™ Instructor, and forms part of the coursework for that programme.

Youth, others learning the game and those still improving their amateur status will also benefit highly from understanding each part of the sport.

This level of detail is NOT, however, suitable for professionals and high level amateurs about to play matches. While useful for pre tournament checks or pre season study and performance development, the professional should always ask for what purpose they need the detail. Their job is to concentrate on the business of winning, and taking their game down to its' finest components just before competition can take their edge off the focus on results.

Other psychological and physical preparation methods found in other tools available from The Snooker Gym™ are more suitable for players of this standard before matches.

It only leaves me to welcome you to this bountiful garden of knowledge I have been fortunate enough to discover, and wish you well in your quest for the kingdom of snooker performance.

Nic Barrow.

Dubai.

January 14<sup>th</sup>, 2004.



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10 cool visual examples.

## **Disclaimer:**

The tests and information in this guide are designed to give you a good working knowledge of the main elements of eyesight and your own vision in particular.

They are not intended to replace professional diagnosis.

In this case, you should seek advice from your ophthalmologist (eye doctor), optometrist (who is licensed to measure the strength of your eyes and to recommend contact lenses) or optician (who is licensed to provide lenses and frames).

## **Vision test.**

Use the vision chart on the previous page by going through the following steps. The chart itself is a standard international eye chart.

1. Hang the chart on a wall and stand exactly six meters from the chart.
2. Cover one eye with one hand. This is preferable to simply trying to close one eye of its' own accord as when doing this it will be harder to fully relax the opened eye.
3. Starting from the top line, read each character on each line, stating whether the open bar in each character faces left, right, up or down.
4. If you can get to the bottom of the chart and accurately determine the direction of each open bar on each character of that line with both eyes, then you have perfect, or '6/6,' vision.

Incorporate this knowledge into your game as follows:

If one of your eyes is markedly stronger then the other, you may benefit from changing your head position slightly when you are down on the shot. If you prefer to keep the centre of your chin

on the cue for comfort, try tilting your head to an angle so that the stronger eye is closer to directly above the cue than the less strong eye. If you prefer to keep your head in a vertical position (ie with both eyes horizontal as if you were looking at a sunset), then simply slide your head left and right across the cue until you find a head position relative to the cue that you feel gives you the best aiming abilities.

The final step will be to test your experiment. Using what you feel to be the best head position over the cue for your own eyesight, play a selection of practice balls at varying angles and distances for ten minutes or so. If you feel you need to, try changing your 'head configuration' until you see the angles as best you can.

If you are wondering why it is possible to complete this process and still feel confused by the angles, then welcome to the complexities of snooker. You should remember that there are many factors that go to make up a good player and you may have to master a further two or three of these before you can 'see the angles'. All of these factors will be covered in The Snooker Gym™ Training System or by your qualified Snooker Gym™ Instructor.

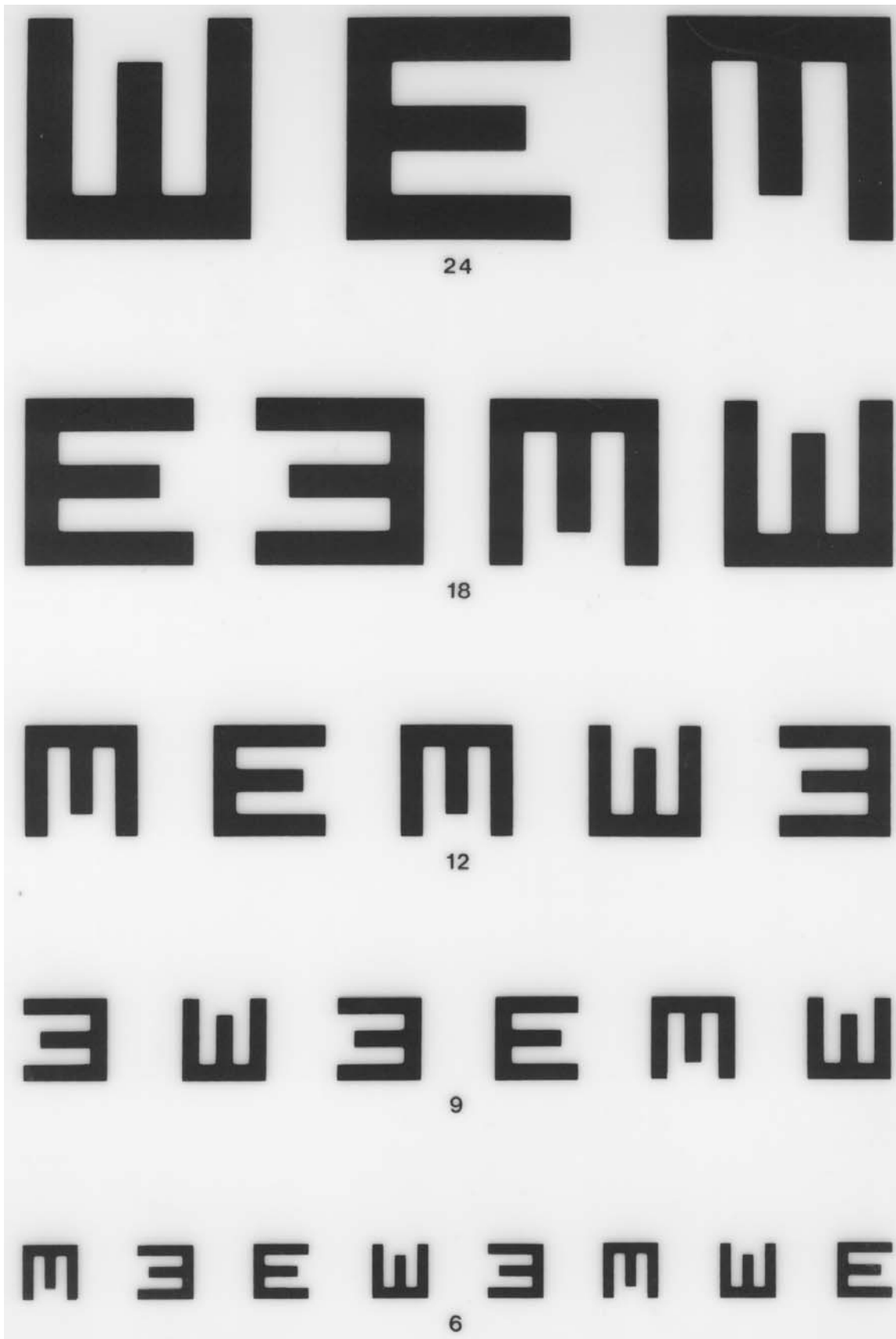


Chart reproduced with kind permission of Clement Clarke International, Harlow, Essex.

## What is 20/20 vision?

The first '20' in this measurement refers to the distance of 20 feet from the client to the chart, although there are certain charts that can be used with the subject less than 20 ft from the chart.

The second '20' refers to a scientific scoring system that represents the clients' strength in each eye. This is measured by an ability to read certain sizes of print on the chart, the exact heights of which are derived from a complex scientific formula. This formula means that 20/20 vision is not the double of 20/40 vision.

Thus 20/20 would be an average strength, 20/40 somewhat less than average and 20/15 higher than average – yes, it is possible to have vision that is better than 20/20.

The scoring system that leads to these ratios is not completely linear, hence 20/20 vision is not exactly the double of 20/40 vision.

Note: In the USA, the measure of strong eyesight would be described as 6/6. Here, the first '6' refers to the distance of 6 metres from the client to the scale, the second '6' the height of the print being viewed on the chart.



## What is near sightedness and far sightedness?

A simple chart characterising the main refractive errors:

	Near vision	Distance vision	Common name	Why
<b>Myopia</b>	Good	Bad	Near sightedness	Ocular globe too long: Image forms in front of retina
<b>Hyperopia</b>	Mostly bad	Mostly bad	Far sightedness	Ocular globe too short: Image forms behind retina
<b>Presbyopia</b>	Bad	Usually good	Age related reading difficulty	Lens of eye loses elasticity with age: Image forms behind retina.

Near sightedness refers to eyesight where it is difficult to focus on distant objects, whereas farsightedness refers to a difficulty in seeing both near and far objects.

The third type of refractive error, Presbyopia, often develops as muscles in the eyes can grow less flexible and supple as age reaches the mid 40's. Presbyopia is not often relevant to snooker players because it is unusual for a player to need to see objects that are very close during a game as the common distance from eyes to cue ball, when down on the shot, is around one metre. As age advances however, it may be that Presbyopia

combines with Myopia or Hyperopia to magnify an un-noticed problem that was always there. Not being able to see the edges of the balls clearly or not being able to refocus the eyes as quickly as in the past may be due to one, or a combination of two, of the refractive errors.

Your ophthalmologist will be able to advice on the exact cause and remedy for any difficulties you may have, perhaps then sending you to an optometrist to have some glasses or contact lenses made.

### **The 'finger on the chalk' test.**

Place a piece of chalk on the top cushion.

Go to the other end of the table and look directly at the piece of chalk.

Keeping your sight locked onto the chalk, raise the first finger of one hand such that it covers your vision of the chalk.

Without moving, lift the other hand to cover one eye. You should see that the raised finger is either covering the chalk or seems to jump to one side of the chalk, indicating that the *covered eye* was the eye the brain had chosen to lock onto the chalk.

Repeat the exercise, this time using the first finger of your opposite hand to cover the chalk. Performing this check will confirm that the eye locking onto the chalk is chosen because of the brain's genuine preference rather than the physical mechanics of exactly where the pointed finger is in relation to the chalk and the eye.

### **What *is* the dominant, or preferred, eye?**

If you were forced to use one hand with which to use a pen, you would have to choose right or left. This would not mean one arm is stronger than the other.

If you were forced to use one foot with which to kick a ball, you would have to choose right or left. This would not mean one leg is stronger than the other.

If you were forced to use one eye with which to view a piece of chalk on a snooker table, you would have to choose right or left. This would not mean one eye is stronger than the other.

So we can say that the 'preferred' eye is not necessarily stronger or weaker than it's opposite eye, but could be one of two equals that the brain

can choose to 'aim' only when it has to close one eye, or squint, to perform a task.

This eye may have been selected by habit, because the eye is actually stronger than the other eye, or simply because you find it impossible to close the other eye on its own!

In fact, by squinting when you needed to with the *other* side of your face, you could even train your non-preferred eye to become your brain's preferred eye.

### **Depth perception with one eye – how the brain can achieve this.**

There are a few ways the brain can elicit distances, or use 'depth perception', if using only one eye:

1. Size comparison – if there are two or more objects known to be the same size, and also in a straight line, the brain can compute the distance between these objects by viewing the variation in their sizes.
2. Parallax – if you have two or more objects of varying distances in front of you, then moving your eyes from side to side will provide a relative movement between the objects that

- the brain can translate into distance. Moving directly toward and away from the objects can also provide similar computing information.
3. Shadows – by knowing the position of a light source and one's position relative to it, the object's shadow provides cerebral evidence as to its' exact position relative to you.
  4. Frames of reference and known distances – if you know the size of your local football stadium, living room or indeed snooker table you should be able to gauge the distance between yourself and an item any place in, on or next to it.
  5. Experience – give a baby the keys to a car and a patch on one eye, and she probably won't negotiate roundabouts too well. A ten year old would do a far better job, whereas a twenty year old, barring inebriation, should perform the task perfectly due to their increased experience of the world around them in general. This is an example of experience giving an ability to judge distances.

## **Binocular vision.**

This is the process whereby the brain fuses the two separate images taken from both ‘cameras’, or eyes and is also one of the main ways the brain can judge distances. You can test this ability as follows:

Use the inside of a kitchen roll, or just your hand shaped as a tube, as a telescope to look through one eye.

Focus on any object in front of you.

Without moving, bring your other hand toward the open end of your ‘telescope’. Stop your second hand before it completely closes the light inside the tube.

It should seem as though you are seeing the object you are focusing on ‘through’ your hand, just like how the scenes fold into each other in a movie.

Test with both eyes until you can register this effect but if you cannot, explain the test to a couple of friends to check you are performing it correctly before booking a check up with your ophthalmologist.

## Depth perception.

Binocular vision has two main types. When the viewed object is registered by the same parts of the corresponding retinal areas, you have binocular vision with normal retinal correspondence. Within this category are people with the ability to judge distances, or people with little ability to judge distances. Stereopsis is the term used for depth perception generated by fully functioning binocular vision in individuals with normal retinal correspondence.

To test this in yourself, try the following:

Find two pins or two needles.

Hold one in each hand, with your hands about 30 centimetres away from each other.

With both hands approximately half a metre away from your face and with both eyes open, slowly move the pins toward each other so that their respective points gently make contact.

How easy did you find it to do this? Can you improve your ability to do this with a bit of practice?

Try another test:

Keeping both eyes open and look straight ahead into the distance. Stretch your arms in front

of you with your hands placed horizontally and kept about thirty centimetres apart. Pointing each index finger toward the other hand, slowly begin moving the two fingers toward each other. Keep your eyes looking into the distance, and as the fingers get close you should notice a strange fingertip produced between the two fingers. This is made up of half the image of each approaching finger and shows that your brain is correctly creating three dimensional images from its' two imaging sources – the eyes.

It is for this reason that it is easier to perceive the depth between vertical objects (eg trees) and harder to perceive the depth between horizontal objects (eg steps or mountain tops). If you want to judge the distance between mountains tops more easily the next time you are on top of Everest, tilt your head to ninety degrees so that your eyes are vertical to the ground – but don't fall off!

Interestingly, you will notice that if you repeat the same test with the first fingers approaching each other in the vertical plain there will be no image formed for you by Stereopsis. This is due to the horizontal position of the eyes.

To follow on to the second type of binocular vision, if an individual has corresponding retinal areas that pick up *different* parts of the same image,



that person has abnormal retinal correspondence, which will hamper the process of binocular vision. Beyond the scope of this manual and expensive to measure, this type of anomaly can be diagnosed only by your ophthalmologist or optometrist.

### **A common error amongst coaches.**

If you are right handed, does that mean you would only use your right hand to use the steering wheel on a car? I doubt it.

If you are left footed, does that mean you only walk along the street by hopping along on your left foot? I doubt it.

Many coaches have been known to use the ‘finger covering the chalk’ technique to elicit a ‘dominant’ eye (a more appropriate term would be ‘preferred’ eye), then suggesting to the player they lay the cue directly under that eye. They would ask the player to achieve this by either tilting the head to one side or alternatively moving the cue to the left or right of the chin to sit underneath the dominant eye’s relevant cheek.

This idea has been suggested many times before and it will for sure be suggested again – just

be wary of such advice if it creeps upon you in the future.

## **Colour blindness.**

Occasionally a player will have difficulty judging certain colours from others on the table. This will be the result of malfunctioning Red, Green or Blue colour receptors on the retinas. Although an accurate test of this should be in natural sunlight, it is obviously best to test for 'snooker blindness' in the indoor snooker environment despite there being some blue in most indoor lighting.

Protanopia (or red-green colour blindness) is due to a lack of red sensitive pigment on the retina cones.

Deutanopia denotes a lack of green sensitive pigment.

Tritanopia, which is very rare and more complex than the first two examples, is represented by a difficulty in distinguishing between blue and yellow.

Monochromatism signifies that an individual can distinguish images by brightness only,

meaning that they would only be able to see their world as a black and white movie.

## **Blind spot.**

The blind spot represents the part of the retina with no light receptors – the area where the optic nerve or ‘eye cable’ starts from eye to brain. If you are interested to test this and learn another party trick, you can do the following:

In one hand at shoulder height, take a pen and point it toward the ceiling.

Hold the pen about one metre to the side of your vision.

Holding the pen still, focus your eyes on a point directly in front of you.

Slowly move the pen into your field of vision, whilst keeping your eyes fixed on the point ahead.

As the pen comes closer to your view, keep looking at the point ahead of you, but notice out of ‘the corner of your eye’ the top of the pen.

As you keep looking ahead and bringing the pen closer you will notice a moment that the top of the pen is invisible to you, whichever eye you are using.

This is the blind spot.

## **Lazy eye.**

This is distinct from anything we have discussed so far, and can be caused by improper development of the eye-brain connection in childhood. The 'lazy' eye itself can often be weaker than the other eye, and binocular vision can also be affected by the lazy eye. For a full diagnosis, consult your ophthalmologist.

## **Concentration and the disappearing white.**

This is where concentration and eyesight mix, and I will now follow with a concentration test.

Stand in front of the black spot with a red on the blue spot and white on the pink spot.

Get ready to stare intently at the red for about sixty seconds or more.

When you are ready and also sure no-one will disturb you or look at you like you were from outer space, begin staring at the red ball only.

Do not give in to the tendency to think about, or look at, other objects in the room.

Your eyes and mind are to be on the red only.

If you are able to keep doing this with some degree of concentration, you may notice the outer edges of your view becoming blurred to such a degree that the white ball on the pink spot seems to disappear.

If you don't get a successful result on this first time, keep practicing it until you can maintain your concentration to a slightly higher degree, giving you the 'disappearing white'.

Now, what is happening here? Toward the outer edges of your retina there are less light receptors. Twenty five per cent of these are situated in the centre spot, or Fovea, of the retina, and the small area surrounding it, or Macular. This means it is harder to form an image peripheral to your focus, thus if your focus remains rigidly straight ahead, the edges of your field of vision can become blurred.

If you have ever looked directly into a switched on light bulb, the 'after image' that stays in your field of vision for a few seconds afterward will not be replicated if you just see the light bulb out of the corner of your eye. This phenomena, allied to tight concentration toward one point, means you have quite literally blanked out everything around you.

Now you know what it is like to be a professional!

**End credits:**

This guide has been compiled with the assistance of Dr. Baby John, Senior Ophthalmologist at Charly Poly Clinic in Al Karama, Dubai.

He can be contacted on 00 97 14 337 91 91.

## The ‘free ball’, and how to be sure you have one or not.

Here is something to apply your newly found vision skills and knowledge to...

According to the official Rules of the games of Snooker and English Billiards (Copyright © WPBSA Ltd), Section 2, Rule 13 states:

A *free ball* is a ball which the *striker* nominates as the ball *on* when *snookered* after a *foul*.

(*Italics* highlight a word that is defined elsewhere in the rule book).

Section 2, Rule 11 states:

Any ball which may be lawfully struck by the first impact of the *cue-ball* ... is said to be *on*.

According to Section 2, Rule 16 the definition of a snooker is:

The *cue-ball* is said to be snookered when a direct *stroke* in a straight line to every ball *on* is wholly or partially obstructed by a ball or balls not *on*. If one or more balls *on* can be struck at both extreme edges free of obstruction by any ball not *on*, the *cue-ball* is not *snookered*.

This contradicts most people’s perceived definition of a ‘snooker’ as they think a snooker means one is unable to hit any part of their ball or

balls 'on'. So you can quite legitimately state to your friends that the commentator is wrong when saying a player is not snookered if able to hit just an edge of the ball 'on'.

They are snookered in this situation, unless they can hit both extreme edges of the ball 'on'.

I remember having a big pro-am match in Manchester once, and in the first frame I needed one snooker on the yellow. I had a free ball, and as experience had taught me previously, I asked the 'referee' to confirm it was a free ball. He said no and point blank refused to discuss it.

I explained (very diplomatically I thought at the time!) how he could 'check in such a way as to be sure'. When he refused to do this I showed him how to check it but he still refused (or maybe he was just embarrassed by now?!). My opponent knew I had a free ball but understandably just kept quiet and did not answer my request for clarification.

I was totally shocked to discover that this referee was on the English rules committee of snooker! My temperament at that time had got good enough to brush off mistakes like this from officials, and I eventually won the match 3-1.



I have resolved in this section to give you an ability to understand what a free ball is, how to check if you have one and how to be able to explain it to others. The other reason I was driven to put all this down so clearly is that it does take a long time to describe what a free ball is using balls alone. Being able to explain it diagrammatically first, and then follow this up using balls, is a tremendous advantage.

After I completed these diagrams, I wanted to prove that this set of diagrams work. So I spent a couple of minutes explaining to Anwar my graphic designer, who drew these for me, what a free ball is and how to check if you have one. He had no clue what the diagrams were for when following my instructions in designing them and had never played snooker before. But within two minutes he had a better understanding of a free ball than the ill fated Manchester referee.

So go through the diagrams and take them along to the club just in case an errant opponent (or referee!) tries to trip you up.

A clear path to both edges of the object ball. The small boxes are just to show the square angle between the path of the cue ball and the edge of the object ball. Note that it is impossible to ever hit the two fattest edges of the object ball from one cue ball position. The object ball is 52.5mm in diameter. The two possible contact points on the object ball will always be less than 52.5mm from the same cue ball position. This is because the cue ball is of course approaching the object ball from a slightly different angle to the left and to the right.

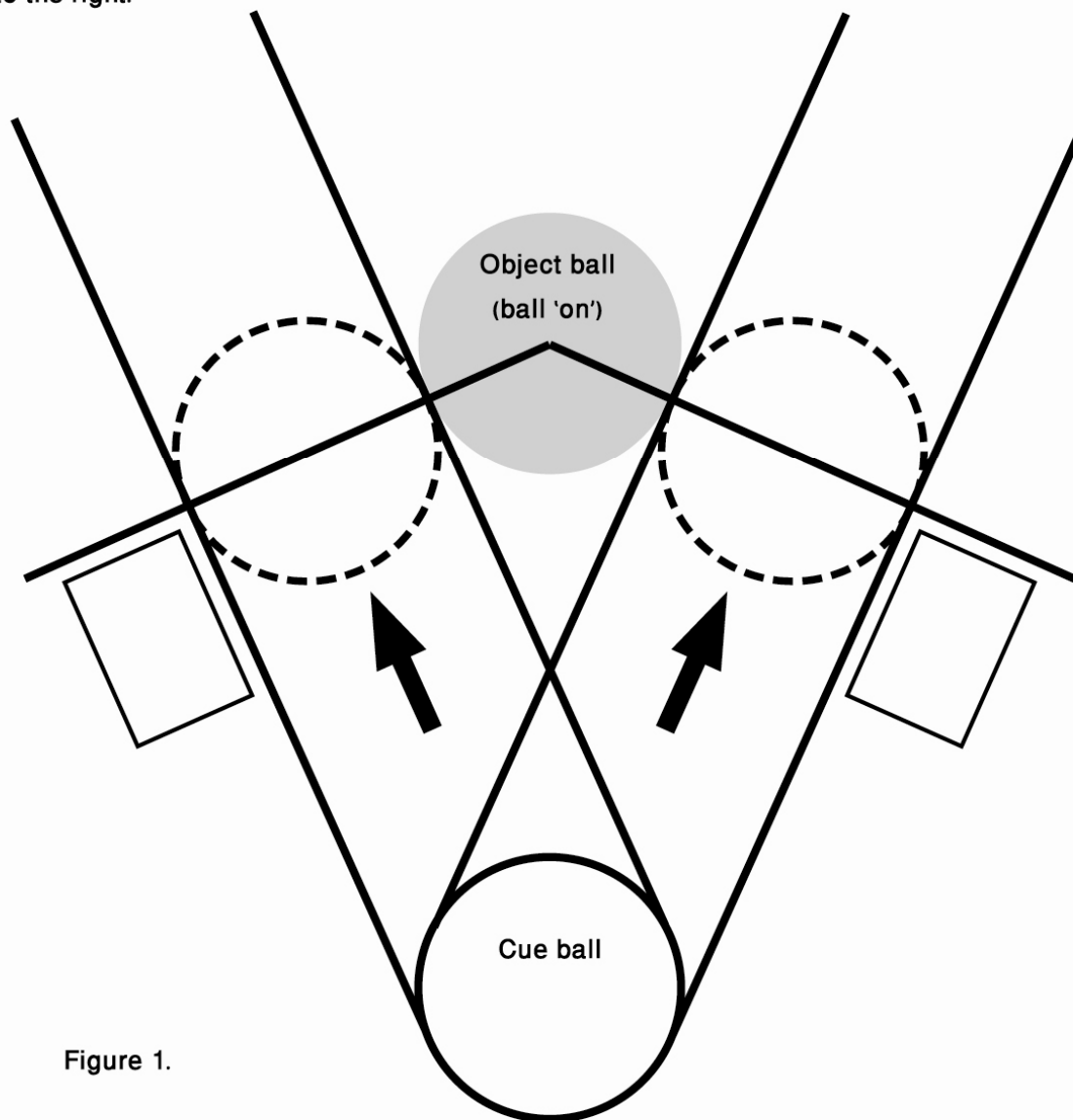


Figure 1.

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Still a clear path to both edges of the object ball. None of the intervening balls prevent the cue ball reaching both extreme fine cut edges of the object ball. You therefore have NO free ball.

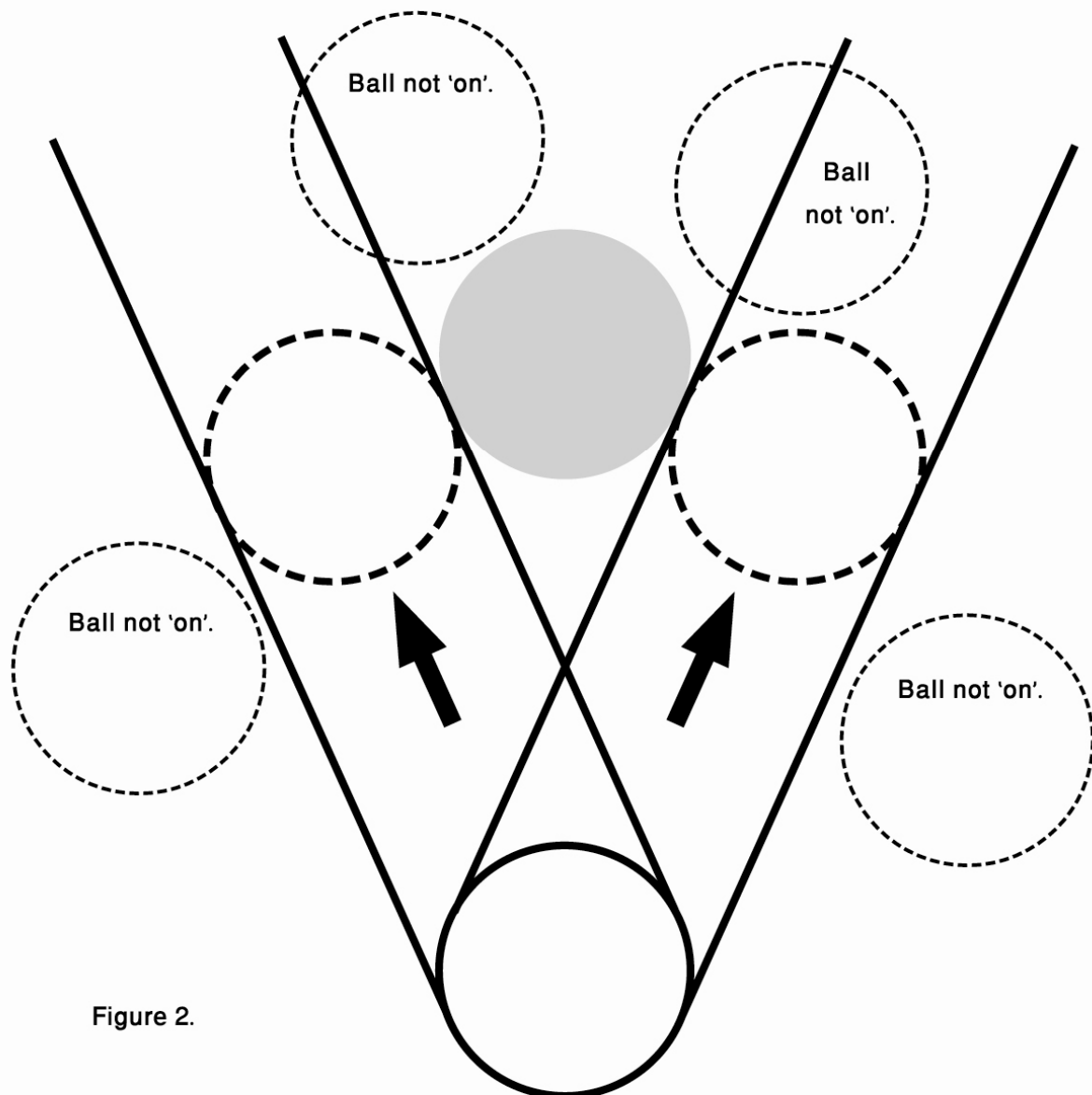


Figure 2.

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Blocked path to one edge of the object ball. The intervening ball prevents the cue ball striking the right edge of the object ball.

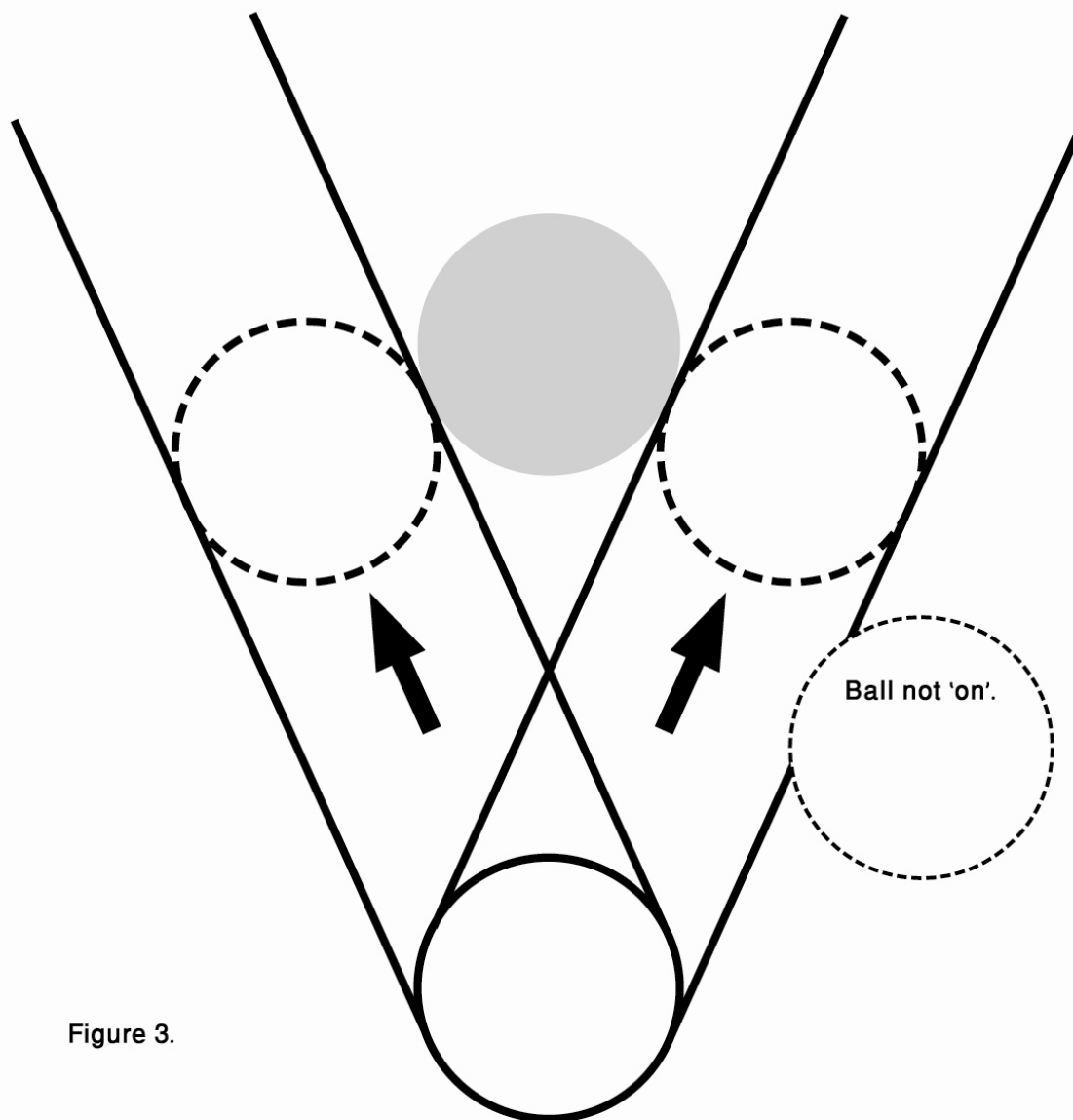


Figure 3.

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Cue ball cannot hit extreme edge of object ball, as it is unable to get past intervening ball. In this case, you therefore have a free ball because you cannot hit both extreme edges of the object ball.

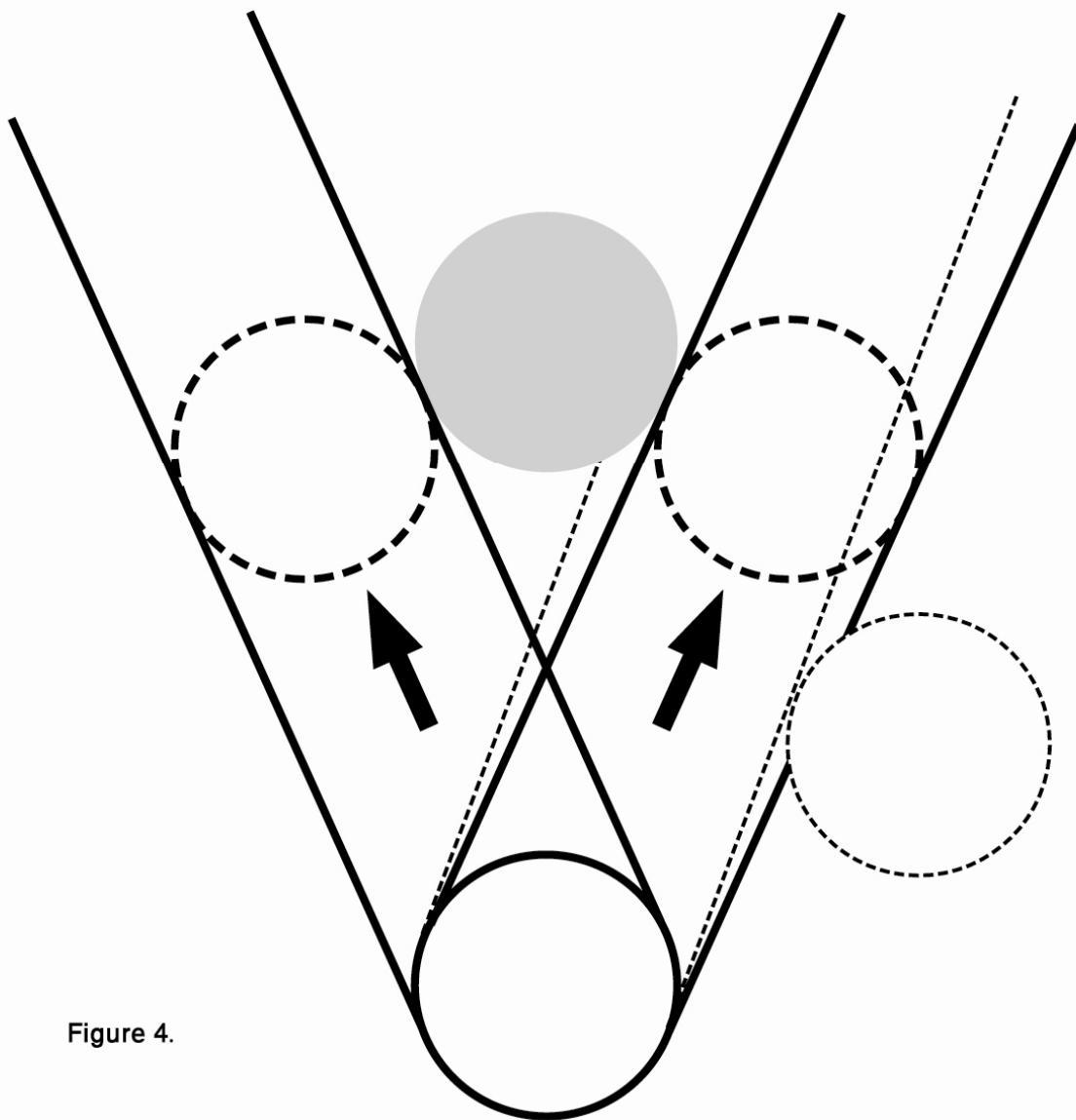


Figure 4.

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Blocked path to left edge of object ball. This time, the cue ball is unable to travel far enough along the required path to make contact with the extreme left hand edge of the object ball. The intervening ball looks as if it is behind the object ball to the untrained eye, but actually it is obstructive. We will learn how to test for this obstruction shortly.

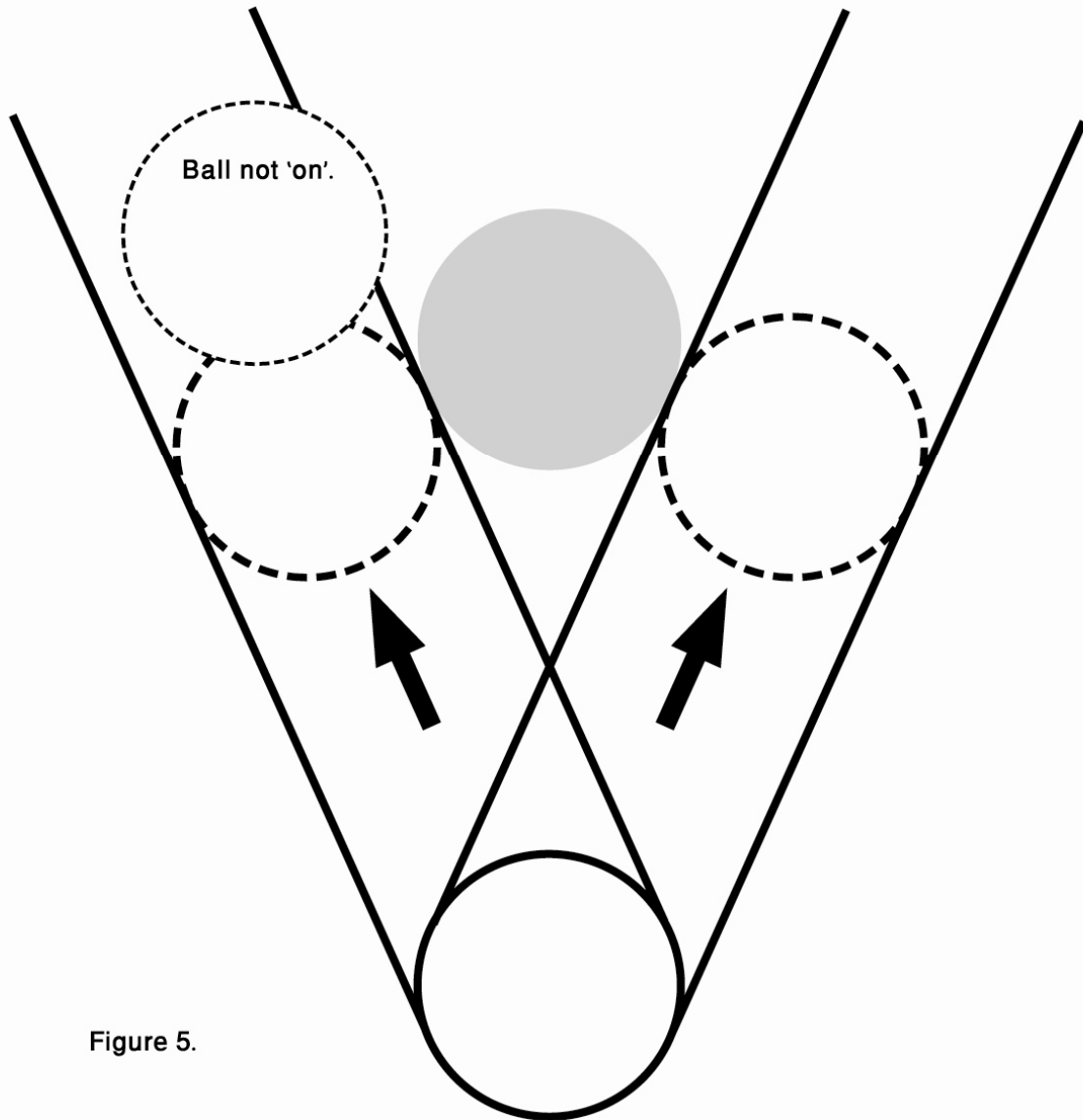


Figure 5.

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Edge of cue ball is prevented from reaching edge of object ball. Following on from Figure 5, we can now see that even though the intervening ball appears to be behind the object ball, the cue ball cannot reach the extreme left hand edge of the object ball. The cue ball CAN contact the left side object ball, but just not the extreme edge. In this situation, you therefore have a free ball.

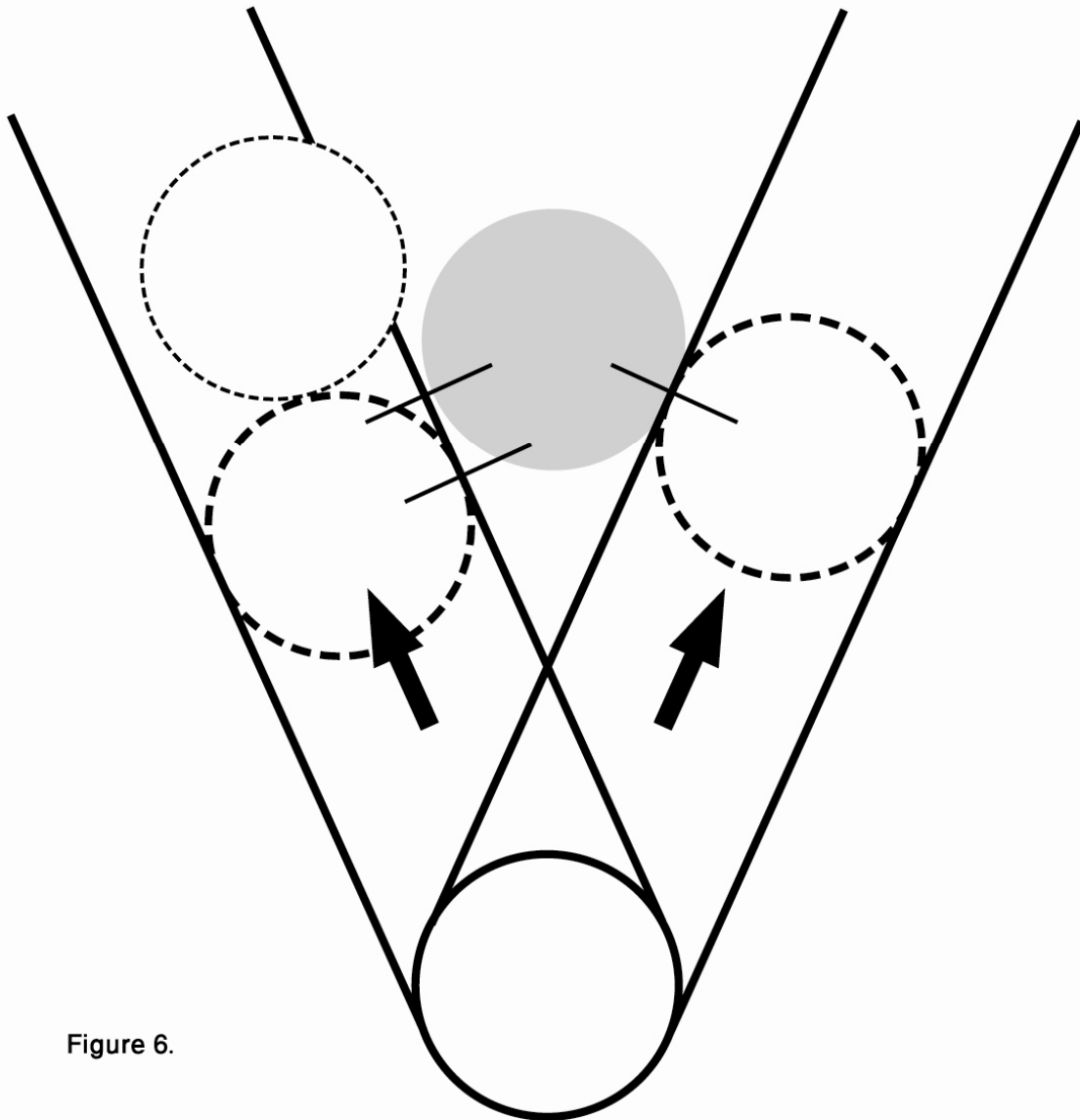


Figure 6.

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Placing a new ball SQUARE to the intervening ball, tells you if the edge of the cue ball can get past the edge of the object ball. Simply take a ball out of a pocket and place it square to the intervening ball. If no ball has ben potted yet, take a ball from another table, a spotted colour from your table, or use a referees ball marker (which is designed for this purpose and is the exact width of an object ball). Close one eye, and put your head right down to table level. Then, very accurately extend the line of vision from point A to point B and through to point C. You will see that the LEFT edge of your cue ball cannot strike the extreme RIGHT edge of the object ball. Therefore, this is a free ball.

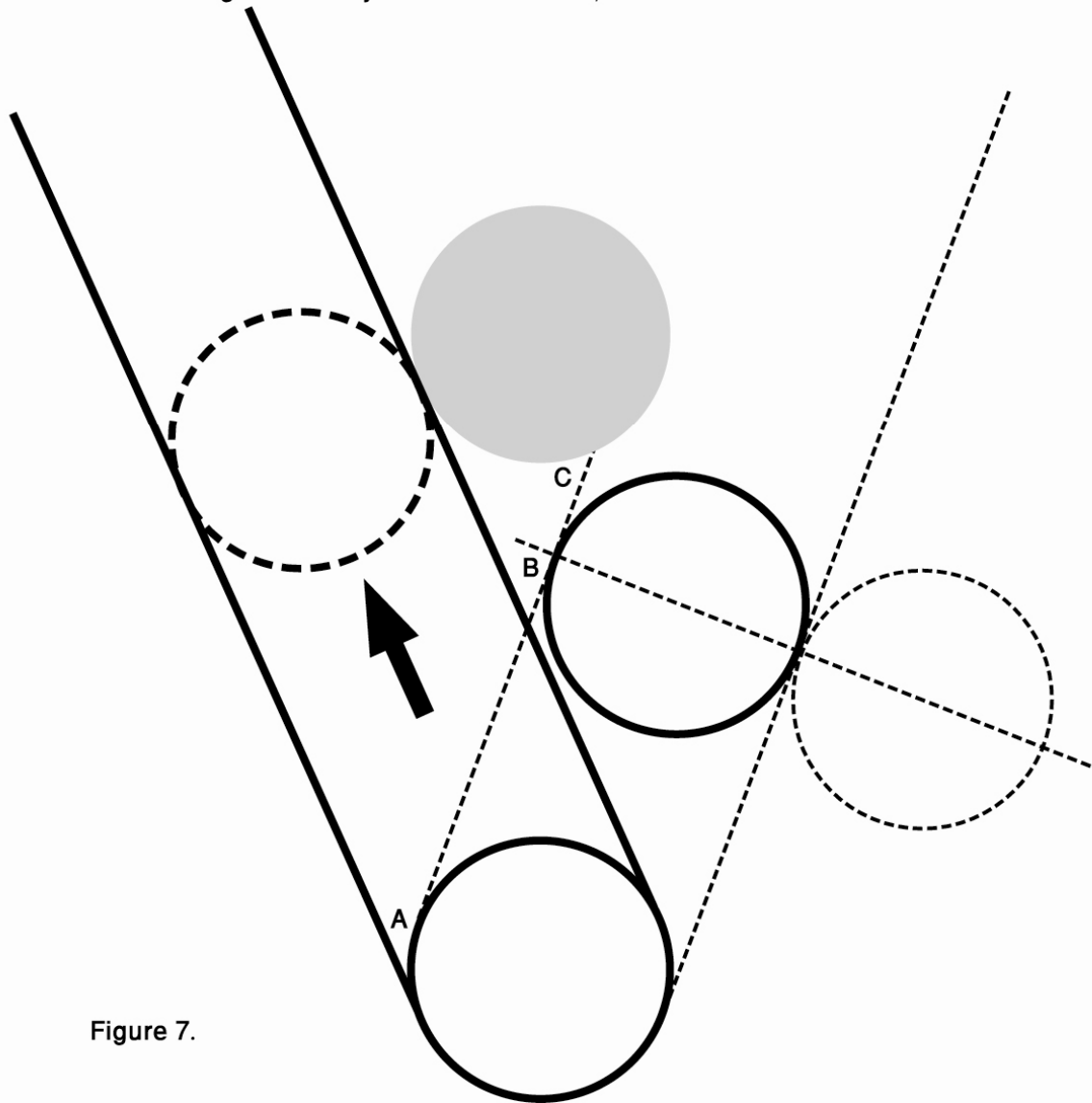


Figure 7.

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Make sure the new ball is placed in the correct 'square' position on the object ball.  
If the new ball is not in this 'square' position, it is IMPOSSIBLE to tell if you have a free ball.

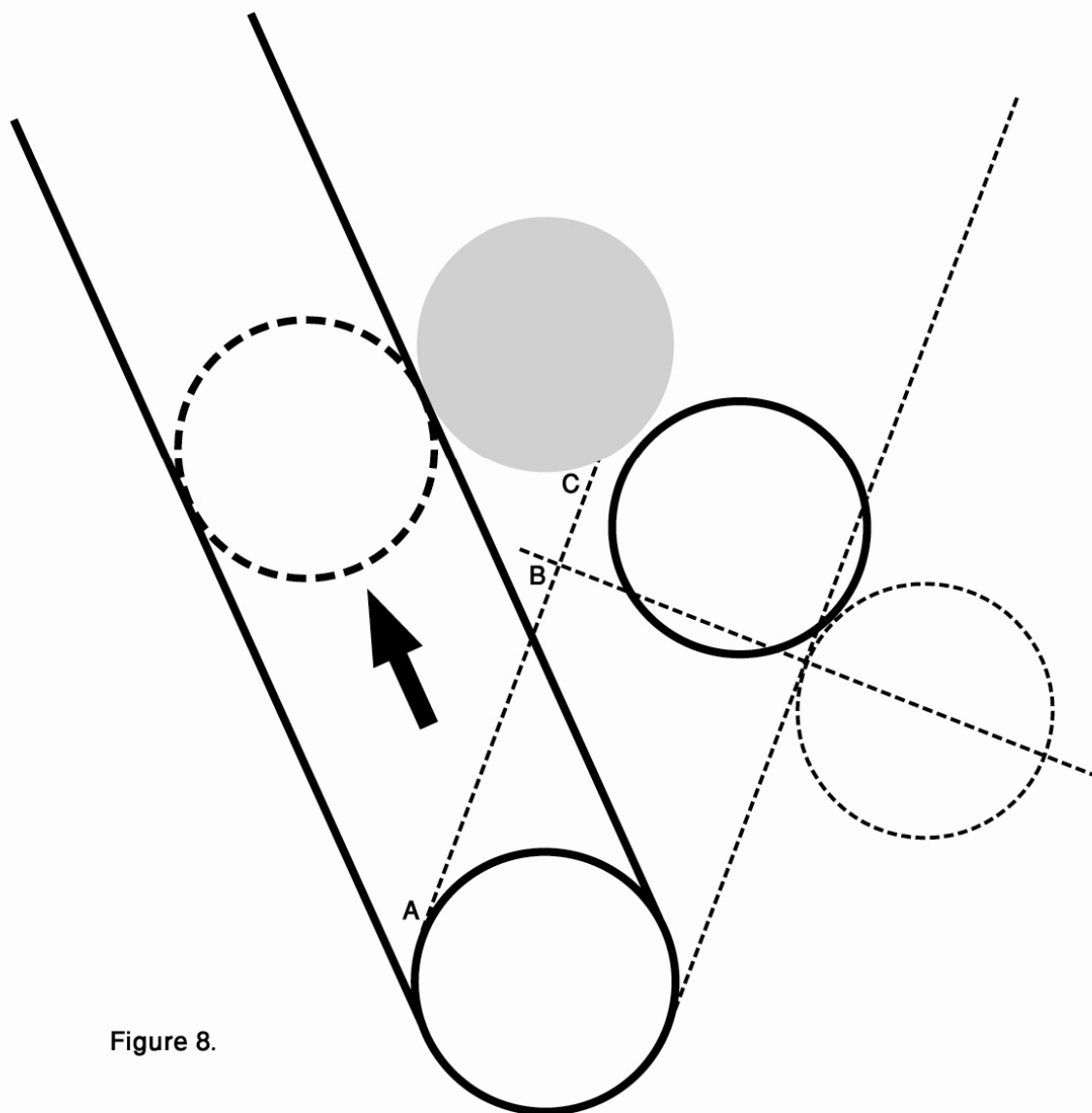


Figure 8.

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If the new ball is not placed exactly in the 'square' position on the intervening ball,  
you will get an...

**...incorrect  
reading!**

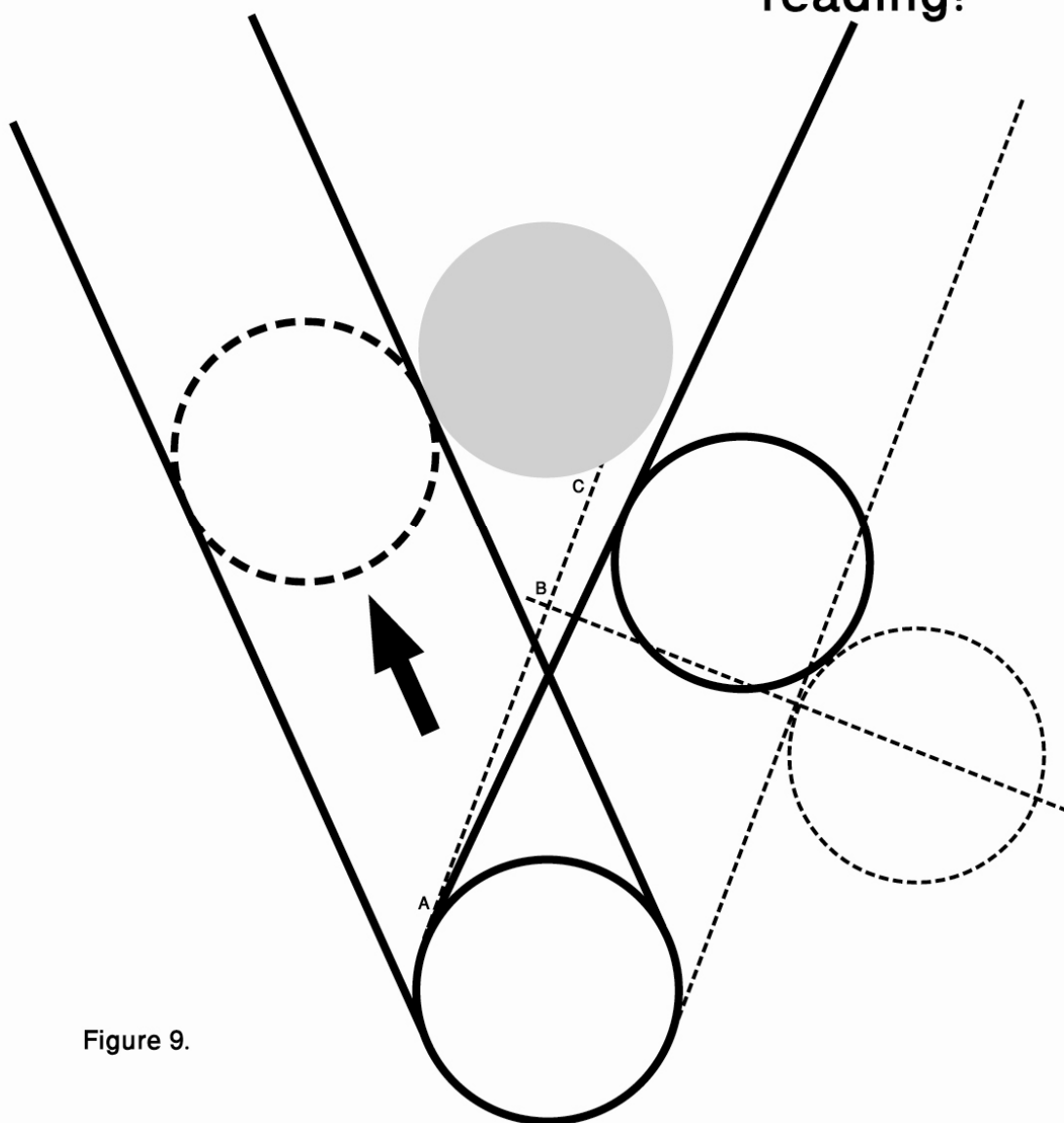


Figure 9.

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Placing a new ball squarely next to the intervening ball, tells you if the edge of the cue ball can get past the edge of the object ball. In this case point 'C' is beyond the edge of the object ball. Here, the intervening ball does not prevent the cue ball striking the extreme edge of the object ball. Therefore, this is NOT a free ball.

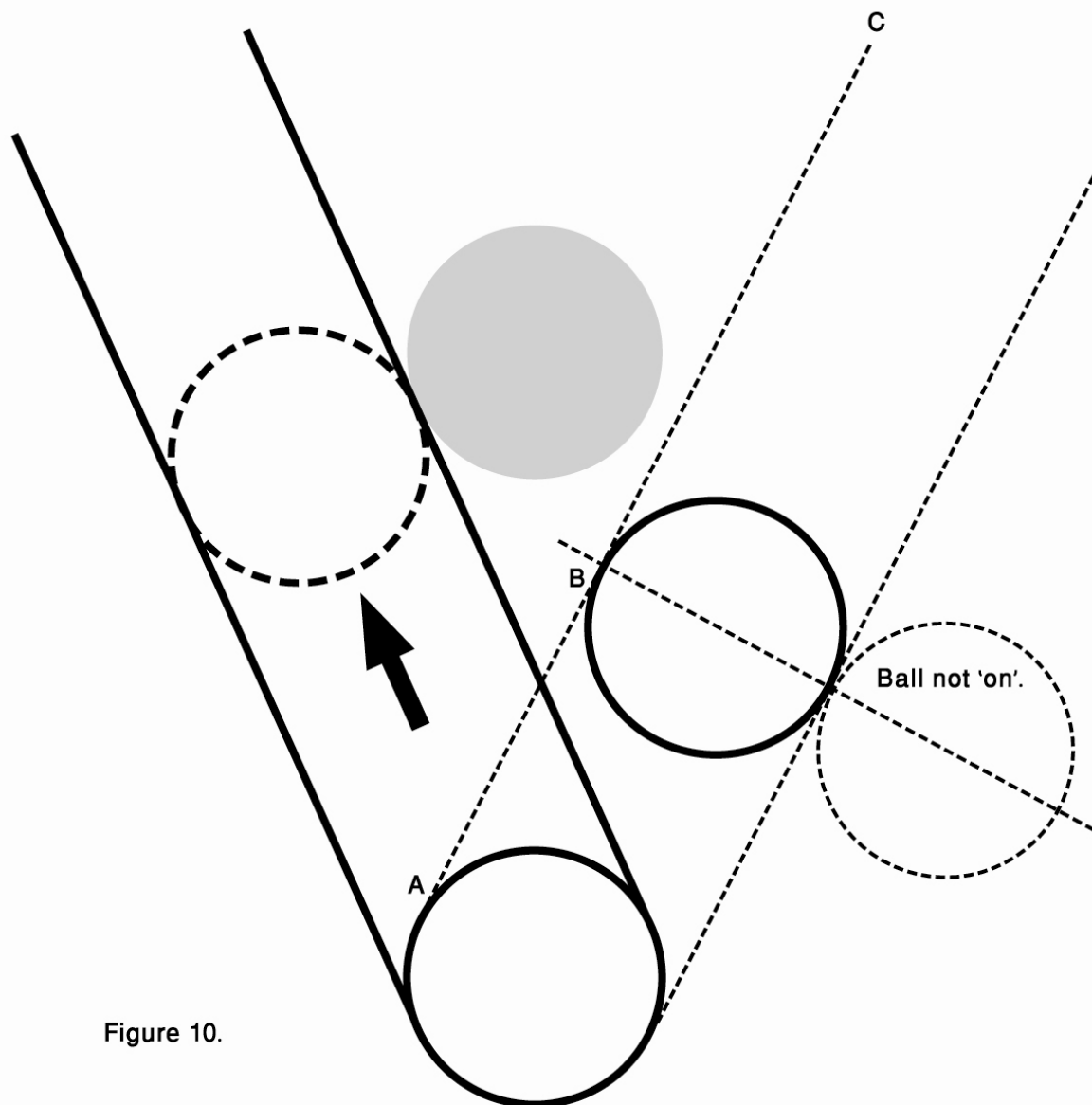


Figure 10.

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## Welcome to The Snooker Gym™ Training Guide Series.

The intention of this series is to educate players, coaches, journalists and others who are interested in any or all of the departments of this fascinating sport.

For the Training Guide Series, snooker has been taken down into its' main constituent parts, each one of which has its own edition in the series.

Each guide will give you a stated objective on the front cover, letting you know what you will gain from knowing and applying the information inside.

Within each guide, you will first find a list of headings for an overview of the subject. Underneath each heading will be a rough description of what you will get from each section.

Each section goes into the nuts and bolts of the game, so that anybody wanting to, can derive a fully comprehensive understanding of the game from the ground up. This is particularly useful for individuals studying to become a Snooker Gym™ Instructor, and forms part of the coursework for that programme.

Youth, others learning the game and those still improving their amateur status will also benefit highly from understanding each part of the sport.

This level of detail is NOT, however, suitable for professionals and high level amateurs about to play matches. While useful for pre tournament checks or pre season study and performance development, the professional should always ask for what purpose they need the detail. Their job is to concentrate on the business of winning, and taking their game down to its' finest components just before competition can take their edge off the focus on results.

Other psychological and physical preparation methods found in other tools available from The Snooker Gym™ are more suitable for players of this standard before matches.

It only leaves me to welcome you to this bountiful garden of knowledge I have been fortunate enough to discover, and wish you well in your quest for the kingdom of snooker performance.

Nic Barrow.

Dubai.

September 19th, 2004.

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## Introduction.

What is a 'bad' table anyway? One that always nags at you? One that is always down at the pub with his mates? One that never listens to anything you say?

Unfortunately, none of these descriptions hit the nail on the head because the definition differs from person to person. Everyone has their pet bug bears relating to certain types of table.

Some like slow, some like fast. Some like TV style lighting, some like snooker club lighting. Some prefer bigger pockets, some prefer smaller.

Here, we will explore the different variables possible on all snooker tables. This being the first of three steps to turn your nightmare around:

*Observe* each variable.

*Predict* how they will react.

*Planning* your shots with this knowledge, and enjoying the variation in every table.

So, how do tables differ?

## **1. Cloth.**

### **Make of cloth.**

Each make of cloth has its' own particular shade of green, texture of nap (nap is the snooker term for the directional grain of cloth) and slightly different ball reaction and aging characteristics. These can all make a difference to how to play the game on a certain table.

### **Age of Cloth.**

The different makes of cloth obviously have a slightly different feel to the hand and also give a slightly different reaction with the ball. Add to this the different weights of cloth that have different lifetimes. Clubs will usually buy a heavier cloth that costs less and lasts longer, but will give a slower roll of cue ball. In contrast, the club match table will often be much faster and have a thinner cloth that needs to be replaced more often.

In motor racing, as the fuel of a grand prix car reduces throughout the race, the weight distribution and balance of the car obviously changes hugely in response to this loss of weight. Similar changes will occur over the life of a bed cloth. As it becomes worn down through being leant on, brushed and played on, it becomes less

slippery and more difficult to screw back and play power follow through shots. The process is somewhat like changing from driving on an ice rink to driving on tarmac.

### **Side spin reaction.**

The thicker or more worn the cloth, the less the cue ball will be diverted with sidespin. With left hand side imparted onto the cue ball, it will initially be pushed off to the right before being hauled back to the left from the effect of the sidespin.

If the cloth is thicker, it is harder work for the cue ball to be pushed off line, and the arc described by the cue ball for a given amount of side spin and power will be less. This obviously makes a big difference to compensation in aiming when using side and must be calibrated very quickly.

It is also the reason the professionals must be ultra precise in hitting the centre of the cue ball when they intend to, as the cloths they play on are paper thin.

### **Ball contact reaction.**

If the cloth is very thick, slow, dirty, over-ironed or humid there will be extra resistance

between the balls on contact. This is due to the increased time they spend together while they try to escape the thick undergrowth of nap they find themselves in. On shots in this situation that are angled and played slowly, you would usually have to aim a little thinner than usual to be able to pot the ball cleanly.

### **Spots and lines.**

As a cloth is played on and players repeatedly put the balls back on their spots, small mounds of chalk dust and slate dust build up under the spots. A slight ditch also gradually appears in the cloth where it is wearing out from the repeated ball spotting. The combination of these two factors means that a ball on its spot will jump slightly, often distorting its natural direction and certainly making the cue ball harder to move around and react nicely to the balls it is playing.

After a given amount of time, a cloth develops the snooker version of tram lines. These are the lines that run along the bed of the table just in front of each cushion, for the length of the cushion and around into the pocket. It represents the contact point on the cloth where the ball stops, is compressed into the bed of the table by the cushion, and thrown back off the cushion.

Obviously these are deeper and more pronounced visually when one looks at the jaws of the pockets, as that is where most people aim. The effect the tram lines have on the balls is to act as a rut that the ball slows down in. Especially when playing a ball down the length of a cushion, if a table has tram lines the ball can appear as though it is going in but be slowed to a halt on the lip of the pocket just because the player did not compensate for the tram line. So if in doubt as to how one of these lines will react, just play with a few extra inches of pace to ensure the ball drops.

All this does not give you an excuse to slam the balls in down the cushion – be prudent but purposeful.

## **2. Cushions.**

### **Speed.**

The usual test for cushion speed is to clear the balls off the table, stand at one end of the table, and using your hand, to sling a ball up and down the table almost as hard as you can.

This will usually yield a cue ball travel of about four and a half lengths on a table with new cloth on the bed and cushions.

Over time, and as the cushion cloth becomes thinner and less smooth, the speed off the cushions will increase so that after six months or so the same table with the same test may yield five or maybe six lengths.

The fastest set of cushions I have ever seen is one that registered eight lengths on the sling scale, although I have to say that the cloth must have been at least six years old.

### **Consistency.**

Life is not a static computer programme whereby you can just input some data and always get the same result no matter what situation you



are in. Life changes, and snooker table cushions are no different.

From table to table, even if they are the same make, the cushion reaction will be slightly different. Even on the same table, each cushion may often have a slightly different speed to the others. Even along the length of one particular cushion, there may be different areas on it that throw the ball off at different speeds.

The same applies to tournament tables on the television at times, and this is because even the best table technicians are human and sometimes screw the cushion bolts at different pressures, or pin the cushion cloth back with a slight variation of pulling pressure, or apply different amounts of glue to the wooden blocks hidden in the cushion behind the rubber cushion face, or install wooden blocks with a different density along their length. So don't be surprised if the same thing or worse happens in the local club!

### **Cushion cloth.**

The age and thickness of the cloth on the cushions also makes a huge impact.

As a cloth gets progressively more worn, the balls react with more speed off the cushions. So by looking at the state of the cushion cloth when

you approach a table, you will have a good idea of the speed the cushions will play.

When the cloth is new, the other variable that presents itself is the angle the balls reflect from the cushions. The ice rink / tarmac analogy still applies and how it translates into cushion reactions is that the ball will slide off the cushion at a slightly greater angle than that it approached the cushion with. Left or right hand side on the cue ball will also have less of an effect on changing the angle of reflection from the cushion because there is less friction on the cushion cloth for the side spin to get a handle on.

It is usual in professional tournaments for the table fitters to put a slightly thicker cloth on the cushions, as this will give a more predictable sliding effect from the cushion.

The final difference made by varying cushion cloths is the acceptance of a ball into a pocket. When the cloth is well worn, there is more friction as the ball strikes the face of the cushion. This equals more resistance for the ball entering a pocket, especially if the ball is being sent down the cushion, in which case it will usually wobble in the jaws two or three times before dropping. So when a table is recovered a player will often think the

pockets are bigger but only because the balls slide in more easily.

Just imagine someone has smeared oil on the cushions near the pockets and you will get the feeling of why it is easier to pot balls with a new cloth.

### **Height.**

The higher a cushion is the more it will trap the ball under the cushion face on impact and slow it up on rebound compared to a lower cushion that that will tend to give a more direct push back to the ball on impact.

We are only talking about millimetres in height differential here, but that is enough to make a huge percentage difference to the characteristic of the ball's reaction.

When playing with the cue ball on the cushion, excess height caused by minute variations in cloth thickness, cushion timber or fitter technique will make it harder for you to hit a solid part of the cue ball or apply sidespin or power if required. There is simply less of the cue ball to hit, which restricts the range of shots possible from this position.

Hint: if you have high cushions, make sure your opponent is left with their cue ball stuck to

the cushion after you leave the table even more than you normally would!

### **Wooden cushion rails.**

There is not usually much difference in the feel of different cushion rails to the hand, although a table with a curved edge to the rail is often more comfortable to play on.

What can make a difference is whether the cushion rail is dirty. If it is, it can be less easy to make the fine bridge hand adjustments for aiming when playing off the cushion. It may also force a player to lift their cue just higher than the rail when cueing up, to avoid the cue gripping the dirty, sticky cushion and being pulled off line.

The height of these wooden hand rails are sometimes higher on certain tables and can also be inconsistent along their length if one has bowed over time.

With these higher hand rails, it is harder to drop the cue onto the cushion and cue up smoothly because it will mean the cue slides around on the wooden surface. Most players who *do not* lift their cue very slightly above the cushion and cue up purely from their thumb and forefinger, prefer the key of the cloth to be the surface that supports the cue when cueing off the

cushion. It gives more controlled, predictable results.

### **Pockets.**

Pockets are one of the largest variables, and the biggest misconception in snooker is that the pockets on TV tables are bigger than on the tables in your local snooker club.

The reason for this misconceived idea is that the camera on close ups is a lot nearer to the pocket than most people in a club are when their opponent is playing. Have you ever seen a club player stooping down with their eye virtually right on the pocket leather being aimed at?!

The cushion rubber on the TV tables has a consistent, flat face that carries on around into the pocket. What happens in ninety nine percent of clubs is that the table fitter will take this standard piece of cushion rubber and cut or file it away from the face of the cushion as it carries around into the pocket. If you look at any club table you will see this cut down effect on the entrance to every pocket. This makes it easier for the balls to go in so that the members enjoy the game and come back more frequently.

Another way the pockets can trip players up is in the distance from the fall of the slate to the

back of the pocket leather. If this distance is too small, a ball played with power can often jump out of the pocket after having hit the back of the pocket plate with total accuracy. This used to be especially prevalent on the middle pockets of BCE tables.

The difference in pocket leather colour and size also has an impact for some players on their ability to aim the ball – the lighter, brighter and bigger the leather, the easier some players find it to aim.

### **3. Balls.**

#### **Size and weight.**

All balls are the same size, right? Wrong! Section 1, Rule 2 of the official Rule Book states that the balls should be 52.5 millimetres in diameter within a tolerance of  $\pm 0.05\text{mm}$  across the set. This doesn't sound like much, but if the balls were of equal density, it would be the equivalent of putting a ten mile high coating of earth all the way around the world. Imagine how much weight that would add to your game of cosmic billiards! This makes it easier to screw back from some balls and harder to screw back from other balls, and vice versa with follow through shots.

What also happens in club set ups in particular is that the balls usually have a life of between two and twenty years depending on how much the owner is investing in replacing equipment. The abrasive nature of the cloth, ball contacts and chalk on the tip has the same effect on snooker balls as the tides have on pebbles on a beach. They wear down and get smaller.

I used to notice this in my practice cue ball and had to change it roughly every couple of months. Often I would go to a pro am competition, and, without mentioning any club names, would be able to tell by looking at the balls that they were a bit smaller than they should be. It would usually be the cue ball that was smaller as it receives the most wear and tear, so the pro am term of 'light white' was coined.

Sometimes I could tell that there was just one ball smaller than the rest. I remember once in Prestatyn Sands Holiday camp before they improved the conditions there, the yellow and green in the match I was playing were the only balls on the table smaller than the others. So every time I played a stun shot to go up for a red on the other side of the blue I would play as if I were screwing the ball back, get the stun effect because the object ball was lighter than the cue ball and end up with perfect position. My dear opponent, however, was getting very frustrated with his "...cannon ball of a cue ball.", and "...ping pong ball of a yellow!" He could never get beyond making the situation wrong rather than focusing on where his responsibility lay – noticing and adapting. I just acted as if I did not know there was a problem, and carried on getting perfect



position which infuriated him even more! Needless to say, I won the match easily and had great fun adapting to the unique conditions.

Being aware of this information altered the way I played each shot to get the result I was after. It also put me at a distinct advantage over players who were not able to recognize this as quickly as I could, and even better for me when they did notice it became angry and resisted the situation.

What you resist, persists.

Awareness, cures.

The same rule also states that the balls should be of equal weight, within a tolerance of three grams per set. Again, this doesn't sound like much, but in percentage terms that is about 2 1/2%. Imagine carrying around a four pound weight, or a melon, all day long. That is what a snooker ball goes through if it is 2 1/2% heavier than one of its colleagues. This is immediately noticeable to all professionals and most good amateurs, and will often result in one of the balls (usually the cue ball) being replaced with both player's agreement.

If we go back to the rules, we see that there is a weight tolerance throughout the set and no minimum or maximum weight. When I used to do cleaning work in one of the Oxford science labs at

6am to fund my playing career, I would sneak in a few snooker balls in my pockets to weigh and measure them on all the equipment they had. The size was consistent on my match set but the interesting thing I found was the weight variation. The maximum weight I saw was I think 147 grams with the lightest being 141 grams.

This would be fine if all sets were on the 144 gram average and never mixed up between themselves. However, some ball manufacturers seem to think it will be cheaper to produce and transport balls that are lighter in weight. These balls are the cheapo sets that clubs buy to try and economize. I don't know why, because they are prone to kicks due to their light weight not being able to crush any dust that appears between two balls that contact each other, chip quickly and fade in bright light more easily. They are also the wrong weight in terms of having a decent game of snooker. They sound like marbles when hitting each other and will reveal any slight finger mark in the cloth, or nap variation, or slight imperfection in level by rolling off line like they were being pushed around a golf course.

These balls are often very slightly smaller as well, and can get mixed up among better sets in clubs. When this happens, it is common to come

to play your break off in a match and see one or two of the lighter coloured reds in the pack. You then have three options. First is to look at adjoining tables to see if there are some decent reds that you can swap with your duff ones. Secondly is to refuse to play unless you have the match set. Third is to just get on with it and enjoy the adventure of remembering how to compensate for positional play from your light reds when you are faced with playing at one of them.

Whatever you do at least be aware of, and accept, what your ball situation is before you play your game. Your opponent probably won't have done this so you will have an instant advantage that the opponent will not know about.

### **Cleanliness.**

If the balls have not been cleaned it is like playing snooker with glue on the balls. All types of spin are harder to apply, the balls come to a premature halt, they tend to stick to themselves when the pack is being opened which results in difficult break building, and can often stick in the jaws of a pocket and not go in just because their excess friction is helping them cling for dear life to the cushions and table cloth.

A more frequent occurrence of kicks usually ensues, as extra chalk, dust or cloth particles can grip the ball more easily.

This thin layer of grime is usually due to old bed cloths that have taken up a lot of chalk dust over the months, dirty pocket string nets that have not been changed in months or years, dirty pocket runners that hold the balls from falling on the floor, dirty ball crates and clubs not washing the balls weekly. Ironically, as the balls get filthier and filthier, they actually help dirty up all the items mentioned previously, causing a vicious spiral of grime and friction that wears out the cloths more quickly, costing the clubs more in the long run. All it takes is a junior player to clean the balls once a week with soap and water (NOT Fairy Liquid as you get the ‘squeaky clean effect’), in return for free practice time.

Human influence on cleanliness is from handling the balls and the skin’s natural oils clinging to them, smoking, dropping balls on the floor, eating crisps or any type of food and then handling the balls.

## **4. Temperature & humidity.**

Some simple rules of how the air holds and releases moisture will be useful before we get into the details in this section.

The air almost always holds some water and as such is like a wet sponge waiting to release this moisture. It releases moisture in the form of rain, mist, fog, and also in the form of condensation on surfaces.

The article that appears below explains the science behind this.

### **Getting a hundle on humidity**

By Jack Williams, [www.USATODAY.com](http://www.USATODAY.com)

If you're having trouble understanding 'dew point' and 'relative humidity', the text below should help you.

- First, the warmer air is, the more water vapor it can 'hold'.
- Dew point is a temperature measure of when condensation will occur.

- Relative humidity is a measure of the amount of water in the air compared with the amount of water the air can hold at the temperature it happens to be when you measure it.

Amount of water vapor air can hold at various temperatures:

30 C: 30 grams per cubic meter of air

20 C: 17 grams per cubic meter of air

10 C: 9 grams per cubic meter of air

These numbers, which apply to air at sea level pressure, are based both on measurements over the years, and theory. They are basic physical facts.

Now, let's see how dew point and relative humidity work.

Imagine that at 3 p.m. you measure the air's temperature at 30 degrees and you measure its humidity at 9 grams per cubic meter of air. What would happen if this air cooled to 10 degrees with no water vapor being added or taken away?

As it cools to 10 degrees the air becomes saturated; that is, it can't hold any more water vapor than 9 grams per cubic meter. Cool the air

even a tiny bit more and its water vapor will begin condensing to form clouds, fog or dew - depending on whether the air is high above the ground, just above the ground, or right at the ground.

Back at 3 p.m., when we made the measurements, we could say that the air's dew point is 10 degrees C. That is, if this particular air were cooled to 10 degrees at ground level, its humidity would begin condensing to form dew.

How about relative humidity? At 3 p.m. the air has 9 grams of water vapor per cubic meter of air. We divide 9 by 30 and multiply by 100 to get a relative humidity of 30%

In other words, the air actually has 30% of the water vapor it could hold at its current temperature.

Cool the air to 20 degrees. Now we divide 9, the vapor actually in the air, by 17, the vapor it could hold at its new temperature, and multiply by 100 to get a relative humidity of 53% (rounded off).

Finally, when the air cools to 10 degrees, we divide 9 by 9 and multiply by 100 to get a relative

humidity of 100% - the air now has all the water vapor it can hold at its new temperature.

Condensation forms on a surface, such as a leaf (or a ball – NB), whose temperature has fallen below the dew point of the moist air surrounding it. Below that temperature, the moisture in the air condenses on the surface to form droplets of free water.

If you wanted to get really involved, you could buy a hygrometer which is a device for measuring the relative humidity of air. At the end of the day, however, if the moisture in the air is reduced or the surfaces of the playing equipment are increased then condensation will ultimately disappear.

Extremes in temperature can be caused by the weather, table heaters and lighting. The weather is self explanatory, and the lights above the table can also warm things up a little. The table heaters used in professional competition are three simple strips of greenhouse filament heaters bolted underneath the slate joists or in other words about eight inches lower than the slate. These slates get warm, and touching the cloth when one of these has



been on for a couple of hours would be like putting your hand on a sleeping cat.

Once at the IBSF World Championships in Egypt's capital city of Cairo with the UAE delegation, we saw the table manufacturer had devised a *twelve* filament heating system that was bolted in place almost touching the underside of the slate. The device had a thermostat that always seemed to be turned to full blast, with the result that the tables felt like a hot dinner plate. Fortunately for snooker players around the world, this invention never got into full production and remained in the experimental phase.

### **How humidity effects:**

#### **The cue.**

If the weather is hot and humid and there are no air conditioners in the room, the moisture in the air will settle on the cue making it sticky and harder work to play with a given amount of power.

At one tournament in Thame, Oxfordshire, I came up in the final against Joe Perry who later on in his career reached the world's top sixteen players. The humidity was so intense that it was like someone had put double sided sticky tape all

over my cue. My only option to keep the cue moving in a straight line was to double the speed of my cueing preambles, which I am sure Joe thought very strange. It worked to keep the score to 3-3, but Joe played a good last frame to take the tournament.

Conversely, if the temperature is very cold, condensation will form on the cue for a similar sticky effect. One league match in Didcot, Oxford illustrated this perfectly. When we went into the club, it was so cold that all of us appeared like smoking dragons on each out breath as there was so much mist coming out of our mouths. This was because the moisture coming out of our mouths was condensing on the cold air around it.

The cue felt like an icicle, and the balls were opaque from condensation. Again it was very hard work to move the cue in a straight line, but the fact I knew I had to concentrate more seemed to work for me and I scored three fifty breaks in the two frames for the first time that season.

### **The balls.**

Again, the balls slow up when moisture settles on them either from hot or cold temperature extremes. Bad contacts seem more frequent even if the balls are simply cold and have no

condensation. If the slate of the table is cold all the way through, this will serve to cool the balls down into virtual blocks of ice for the rest of the day.

One antidote to this is to make a tub of very hot water and leave the balls under the surface for fifteen minutes. This makes them warm to the touch and in this state the balls are less prone to kicks, react more normally when struck and don't cool your hands down when re-spotting them - the colder the hands, the less feel and touch you have.

### **The cloth.**

The warmer the cloth, the more lively the reaction of the balls is. Again, if the weather is too hot and there is not enough air conditioning in the room, the moisture will get into the cloth and slow things down virtually to a halt.

### **The pockets.**

As moisture settles around the entrance to the pocket and also the pocket leather, the balls will drop into the pocket in a type of slow motion. Almost as if you are dropping it into a tub of molasses. This simply adds to the feeling of

slowness, dullness and lethargy in hot or cold temperature extremes.

### **The cushions.**

Apart from the humidity aspect affecting the smoothness of the cloth, I have found that the temperature of the cushion rubber makes a difference to its' speed and reaction. The professional table I had installed for practice was a great example of this.

I used to go to the club in the cold UK winter mornings. For about the first ninety minutes the cushions would play a little stiff, unfriendly and slow in their reaction so I would put the club radiators on and carry on playing while the room got a bit warmer. Then usually around mid morning I would find that, in the space the one minute that the cushions had turned to a threshold temperature, they would suddenly become more lively, natural and effortless in their response.

So be wary if the room is changing temperature, for example at different times of day or if the weather is shifting gear.

## **Your body.**

Your hands are not immune to the effects of humidity. As the cue gets stickier your hands do too, so a good dry cloth in your cue case as an emergency measure is usually very helpful.

Other ways to combat this are to wash down your hands and the cue after every frame to get rid of any dirt and moisture that have built up. I have also seen players using a bridge hand glove or spreading talcum powder on the cueing part of their bridge hand. On more than one occasion I have witnessed a player holding a tissue between the thumb and forefinger of the bridging hand to aid a smooth cueing slide!

## **5. Other.**

### **Lighting.**

As mentioned earlier, the heat from television lights will serve to make the table play a bit faster, but the other main difference here is the reflections on the balls from the light filaments.

Professionals do not use the light reflections in balls as an aiming guide as it is confusing to do, and reserved for players who believe snooker hall fables about how to aim the shot. What is much simpler is to accept that we always have a windscreen when we are driving but choose to look at the road and not the screen.

Looking at the object ball at the part you want to the cue ball to hit will get you better results. This contact point is always on the fattest part of the object ball and half way up the ball as you look at it (IE you can only hit the object ball on its' horizontal equator).

Club tables usually have three light bulbs in a shade that throw three small light spots on the top of the ball. Flourescent lighting that is used in tournaments and some clubs either have a diffuser to spread the light or a series of strips that give different reflections on the top of the ball, a

different colour of light and much less intense shadows underneath the ball due to the more even spread of light.

All these factors mean that your job of looking at the part of the object ball you want to hit is very different with each of the two main types of table light.

### **Table heaters.**

These are three green house filament heaters that bolt underneath each section of the table frame to heat up the slates, cloth and balls so that the balls. This is so that the balls move faster and more naturally with less chance of humidity affecting the game.

As there are only three filaments, there are also areas of the table that do not get 100% of the heat. These areas will play a bit more slowly, for example on a screw shot, than the part of the slate directly above a heater. This is a very small difference, but one to be aware of nonetheless should you need to know it one day.

### **The nap.**

Is the table level? This is the first question most club players ask, and the question that most

pros take in their stride as they go onto their match table.

The first thing to consider is the nap of the cloth. Many cue sports have a napless cloth that feels the same to the touch whichever way you stroke it. Snooker cloth is like cat fur in that the fibres all point one way and feel smooth in one direction and rougher in the opposite direction.

The nap always points toward the black end which means that a ball finds it easier to roll toward the black end than it does to roll toward the baulk end. In fact, the distance measured with a ball rolling device is about five per cent difference from one direction to the other for a given force applied to a ball.

This means that the table is always as if on a slight downward slope from the baulk end to the black end. Added to this is the fact that the nap on every cloth has its own unique strength of pulling on the ball. So these are the first two variables in adapting to how the balls roll around the table.

The best way to gauge this is to put the cue ball in the jaws of a black pocket. Then put four reds six inches away from it and in line with all four available pockets (the fifth is the middle pocket along the side cushion you are next to, and the sixth is the pocket you are playing from). Play



the reds with pocket weight to see how the ball rolls against the nap. Repeat this from all four corner pockets to confirm the down slope effect of the nap is working consistently across each diagonal.

Hitting an object ball with the cue ball will ensure that you don't make the mistake most club players make when performing this test. They act as if they are better than the best player in the world when just hitting the cue ball only, not realizing that the best player in the world cannot guarantee they are hitting exact centre of the cue ball and not putting unintentional side on the ball. Any amount of unintentional side on a ball would distort its direction of travel along the cloth and ruin the test completely. Perform the test scientifically and you will get the scientific results you want from this test, and not woolly results.

If you are not confident of potting these balls accurately enough to get meaningful results out of the exercise, just stick two reds together in touching ball plants that point toward the four pockets you aim at in the test.

### **Level.**

In the previous section on nap, you may have noticed that along the full length of the side

cushion, the ball you were playing may have started drifting away from the cushion slightly and into the middle of the table. This is often due to a slight dishing, or bowing effect, in the slate. The five sections of slate in a table are all supported fully along the length of the cushions, but the centre joists that support the slates widthways are never going to be higher than this because it would mean the edges of the slate rise above the table frame, giving a variation in cushion height across different parts of the table!

This in turn means that if the centre of the slates can never be higher than the edges, then sometimes the joists will in fact be lower which would allow the weight of the slate to cause it to dip slightly in the middle.

Only a minute dip is required to make a huge difference to ball roll. I remember having my table recovered once, and the black going into the corner pocket was dipping about one inch toward the top cushion as it travelled from the spot along to the pocket. The fitter then took the cushion off and placed a *playing card* under each side of the single piece of slate at the black end. This resulted in the black only dipping one centimetre from spot to pocket – the perfect amount taking into account the strength of nap I had at the time.

However, a player does not always have the luxury of doing this before a match, and if they are lucky will only get to test balls along the top cushion and into the middle pockets. Even if it is done discreetly before the table lights are put on, if pushing the ball with your hand to these pockets, you will learn a tremendous amount about the table by this test alone.

As you go through the match, and especially when your opponent is playing, you should always be watching the reaction of the balls for the nuances in the table and also for how straight the balls are running. When you do notice something contrary to how the nap should be affecting the ball, note it in your mind. Even draw mental arrows on the table to remind yourself of where the rolls (directional, not bread) are. I used to draw shadows on the table in my mind that would remain there until the match was over so that I would remember where to compensate my aiming if need be.

The mental attitude to compensate rather than resist is key to adapting to table deficiencies.

Remember where the roll offs are, if any. Instead of being like most people who are in reaction to life and prefer to whinge and moan, do

aim six inches away from the pocket if the table rolls off by six inches.

Either use your intelligence or choose to keep your reality avoiding identity about how the table should be level when it isn't. If you choose to keep this identity you will get significant emotional benefit that limits you completely. You will be like a judge, jury and executioner on playing conditions – all at the same time! You will also get to confirm you are right about how not right the table is every time a ball rolls off. You will get to keep this feeling and be blocked from thinking clearly whilst experiencing plenty of free anger thrown in! You decide...

### **Slates.**

We touched a moment ago on how slates can be affected by the table frame, but there is one other phenomenon we have to be aware of regarding these heavy beasts.

The joins:

There are four joins where the five slates meet, and each slate is prone to moving a bit if the supporting joist under the join is not set properly, or if the pins that lock the slates together have deteriorated. This can lead to a physical step

between the two slates that have interesting repercussions on the balls.

You will be able to notice these when the steps have been struck often enough through playing, brushing and ironing. A white line will begin to appear across the table, often in all four join positions. The worst of these from a playing perspective can be if a step appears at the baulk end - just on the cushion side of the baulk line. This can result in playing to snooker someone by rolling up behind a baulk colour, and seeing the white hit this step, fall away from its path toward the ball, adopt the curve of a parabola away from the object ball, and cause a foul stroke often with the cue ball still behind the baulk colour.

The opponent then can put you in to play again from your step imposed self-snooker, or take their free ball and clear up. This sounds strange but true, but the same thing has happened more than once on television.

The other way it becomes obvious is when playing a long shot. If the step is big enough, the cue ball will jump slightly on impact and you will be able to hear it bouncing slightly as it goes down the table to the object ball. I had this situation once with the step on the join between the pink and black spot. So we put an object ball just past

this step and from the baulk end played a stun shot with full power. Sure enough the white jumped a little when it hit the step, but this translated into a much bigger jump for the object ball – it flew over the pocket and off the table. Fortunately there were no windows waiting to receive it, just a plasterboard wall that developed a rather nice ball imprint...

### **Noise.**

How many people are watching? How many TV's are going? What is the traffic like outside? How loud is the club telephone? What about other members in the club? How many doors are there in the snooker room?

All these factors and more have to be considered to gauge how much noise pollution you will encounter in your match.

### **Spectators.**

Stationary, or moving around? Neutral, encouraging you, or encouraging your opponent? Knowledgeable, or novice? Mobile phones, or no?

Notice what to expect before it happens so as to be better prepared.

## **Referees.**

There are basically two types. Aware. And not aware. The latter will often not be aware of their movement just before you strike the ball, where to stand, how to stand, how to set the reds up straight, how to spot a ball exactly, what a push shot is or what a free ball is.

These are the main offences you will encounter, although in one of the biggest pro-ams in the country I had the misfortune of drawing a referee who was on the rules committee at the time. In the third frame with the scores at one each, my opponent went in off leaving a free ball on the yellow. I nominated the brown and got down to play it, but was pulled up by the referee and told there was no free ball.

I patiently started to explain why it was a free ball and how it could be proved using the foolproof method of bringing a potted red out of the pocket to show that the path of the cue ball could not reach both sides of the yellow from anywhere in the 'D'. It was so obvious at the time that I felt we didn't even need to do this test, as having done so would belittle my correct assessment of the situation.

This approach met a completely blank expression so I resorted to asking my opponent to

give an opinion, which they normally will do. However, he obviously knew he was going to lose the match, so grabbed on to this vestige of hope and pretended he did not know.

So I just carried on, played the yellow, won the match and asked the famous referee who was running the tournament how they train the referees for these events. He told me the referee I had was on the rules committee, to which I gasped, and confirmed my suspicion at the time by telling me that: "...I think the bloke is totally clueless." How he got on the rules committee I will never know.

One particular referee who was very famous and had been on the TV all through the eighties and nineties was drawn to referee one of my matches in Swindon once. I thought he was more interested in being a superstar than refereeing the match. Fiddling with his mobile phone, talking to me just before I was about to play a crunch long ball, blatantly walking in front of my shot just before I was about to strike the ball and generally not paying attention were just some of the misdemeanors committed during the match.

For fear of retribution in future matches, I did not make an official complaint on the match sheet afterward. The view shared by most players I



spoke to, though, was that he was renowned for all these tricks and was the worst referee you could draw out of all of them. This was later confirmed to me when I saw him refereeing an Irish professional at the Crucible, performing similar stunts on that player.

Notice by the general demeanor of the referee you have, what you think his or her level of confidence is. Then learn to accept that ninety per cent of referees will never give you any problems, but be ready for the ten per cent who will administer injustice and disturbance.

### **Flooring.**

This sounds a bit abstract, but sometimes you can have a low floor, sometimes you can have a high floor and sometimes you can have a bit of both.

A high floor is usually caused by table legs that are too short, a low floor is usually helped in reaching the table by having packing discs under the legs. An uneven floor will give you the sensation of walking along a ship *deck*, and scared you may soon be in a ship *wreck*.

One of the many examples of the latter, was a club in Slough called The Herald where I used to play my first competitive matches. In fact it was a

converted cinema, and they had put a pair of tables on the platform where the screen used to be. The only problem was that this platform was actually sloped down toward the auditorium to enable people in the front rows to have a clear view of the screen.

So at the age of twelve I got to feel like a giant stooping down on the table when on the screen side of the table, but a dwarf who could hardly see the table surface when on the other side! All good fun, but probably something I could do without now.

The final part to consider about flooring is how smooth it is. You can be playing on anything from soft deep pile carpet to high friction carpet tiles to sliding marble – are you ready for all extremes? You will usually benefit from wearing shoes with some rubber or grip pattern on the sole as this can help anchor you to your spot in the floor. If you have not been to the venue you are playing your next match in, this approach will also pay dividends as an insurance strategy against having a very slippery floor to play on.

## Misc'.

Some of the strange things I have seen in a snooker situation that can come under no other category than 'miscellaneous' are:

Watching a bird flying a couple of circuits around the match hall in Prestatyn.

Split cues due to intense humidity in a Dubai palace.

A snooker table with red cloth in another palace in Dubai.

A snooker table with blue cloth in the *seven star* Arabian Tower in Dubai.

A table four feet from a wall inside a \$5,000,000 dollar mansion (six feet is the minimum distance to be able to comfortably play a shot).

Bare rubber exposed on cushions.

Tables with pocket leather gone and just brass to greet a ball flying into its pocket.

A table with the worn out cloth turned upside down to reveal the napless underside as the new playing surface.

One thousand school girl spectators piling into the cue sports match venue in the 2002 Asian Games in Busan, Korea within the space of about ten minutes. They were all chattering at full volume.

A table in Peckham that was so wobbly you could have pushed it over. When anyone leant on the table to play their shot, all the balls would move!

Someone in the Asian Championship in China who ran and hid under the table while a match was in progress.

A referee shouting the scores out.

A timid referee who looked like a mouse.

Seeing a table on such an uneven floor that two of the legs were suspended in mid air.

Lastly, there are players who will swear that some tables play inconsistent from moment to moment. Impossible unless the weather has changed or the player is so heavy that they move the tables joists every time they get on the table.

What you have to look for is the smallest detail in where the cloth is fast and for how much distance the ball moves before it changes speed, or exactly where along the cushion the bounce was too fast. If you cannot remember where these points are, it is up to you to develop a better memory or if possible avoid using these areas where you cannot predict the ball's behaviour.

If you do not want to do this, you are relying on luck and hope to get position.

## **6. How to make it your dream to play in such conditions.**

### **Attitude.**

Crucial in any area of life, attitudes are the mental glasses through which we interpret everything that happens in our world. If you want to be able to play the best snooker possible on even the worst table in the universe, then you are interested in these kick-starts.

If you hate 'bad' tables and do not want to adapt to bad tables because you should not have to, if you want to keep onto the sense that you are right about the tables and want to tell the world about it, or if you want to feel like a victim with things beyond your control forever going against you, then please do not read any further... I would not want to have seen you get yourself playing the best snooker possible in all limiting conditions if that is not exactly what you most want now.

## **Attitude 1: Choice.**

Imagine you had never played snooker and someone told you that God has apologized that She cannot apply her laws of perfection to this particular game, because She has more important things to attend to. There are imperfect weather conditions, venues, referees, tables, balls, tips and wire wool in this game and they are here to stay unless She decides otherwise. You would accept this as obvious because no sport can be controlled to such a degree of perfection.

What if someone told you that if you took the game up you could get up to a very good standard (the standard you are at as you read this now) within a very short space of time – IE days rather than months or years. The only proviso is that you also have to learn to play the best snooker possible in ‘bad’ conditions when you are faced with them, and have fun doing it.

Would you take the game up or refuse to accept the offer because of a minor imperfection? What would your current opponents in the game do?

## **Attitude 2:**

### **Great expectations.**

Rage, annoyance or mild displeasure at 'bad' tables is nothing more than a broken expectation. That is also what crying or laughter is – if someone dies or someone gets a divorce or a child loses a toy, tears may result at the false expectation that things were forever going to continue the way they were. The punch line to a joke is also the same – the bigger the contrast between the direction you expect the story to go and where it actually does go for the punch line, determines your level of laughter.

So being upset about table conditions is much like crying. You expect something to be provided that the table is not providing, and you start 'crying'. Not very powerful, is it?

## **Attitude 3:**

### **100% responsibility.**

If you were a perfect snooker player, you would be much better than the current world number one player. You would also be able to beat any player on any table in any conditions.

You are not perfect, but you should work toward this direction. You also have to take responsibility for not being at this standard,

because in theory it must be possible for you to achieve it as you are a human being with unquantifiable potential. Could you scientifically prove you cannot be at this standard? Even if you do not want to think you can be at this standard physically, there is no reason you cannot be at the mental strength, attitude and concentration standard of the perfect snooker player.

One of the ways you can move toward this standard is to learn the simple ideas of adapting to all table conditions.

#### **Attitude 4:**

**Do what you can, with what you have, when you have it.**

Small Indian infants scavenge for saleable items in the rubbish heaps of India. To most, there is just rubbish, but those kids have a mission of supporting themselves and their family. Sometimes they even find a diamond.

Our job as players is to do what we can, with what we have, when we have it. This means that if you are in a bad situation, look for something you *can* do. When you are playing on the world's worst table, the little something you can do is get off your high horse and get adapted to the conditions.



### **Attitude 5:**

**A different table means a different game.**

Driving in rain is different than driving in the dry.

### **Attitude 6:**

**You have all the resources you need.**

Have you played a power shot on a fast table and struck it well? Everyone has. So what is wrong with playing at that power on a slower table where less movement of the cue ball is required than on the fast table?

### **Attitude 7:**

**OPP – Observe, Predict, Plan.**

*Observe* exactly what is happening with the balls on the table and be aware of how all the variables are behaving.

After you have done this to your satisfaction, play your shots but *predict* how they will turn out based on your previous *observations*.

When you have done this and got feedback from correct and incorrect *predictions*, you can then *plan* how to play the shots according to how you now know the table will play.

## **Work it out**

This is the fun part and it is how world famous motor racing driver Stirling Moss used to do so well in the wet, whilst also have a bit of fun with his competitors...

My father recounted this story to me many times, and it was simply to say that Stirling, as soon as it was raining hard, used to walk around the pit lane within earshot of the other drivers and say:

“What a great day for racing, I love the wet. It is so interesting and such a challenge – my favourite conditions for racing!”

If a snooker player were to adopt this attitude, at the very least it would confuse all the other players who loved complaining about conditions.

If you are yet to reach good amateur standard, then most of these variables will not be something you notice too much, but you will still be aware of the main ones like tables speed, humidity, and possibly the weight of the balls.

If you are a professional or a good enough player to be able to play most of the shots in the game, then you can be like Stirling Moss driving in the wet. If he were to drive at the same speed in

the wet as he did in the dry, he would not get very far. So he adapted.

You can also adapt, and this skill is a way of translating the skill you have into the conditions at hand. A fly smashing its face into the same window for three hours has the skill to reverse up and fly out of the back door to freedom, but it does not adapt, and does not look intelligent.

Some of the shots on a non tournament table cannot be played in the same way they can on a tournament table. This is the first thing to be worked out and accepted.

If it cannot be played, work out the next best option. If it can, play it but with the altered power or height in the cue ball as appropriate.

On some shots you may need to take into account several variables. For example, you may be playing your first frame in a club pro am and be faced with a red in the middle that you need to roll in to leave yourself to play a slow black off the spot. You noticed earlier a few points, and have worked out how to adjust your game to them:

The cloth is quite slow, so you know you need to play a bit firmer.

There is a step in the slate join between the pink and black spot, so because you need to roll the black in you elect to stun the red in and keep

the white underneath the slate join, instead of rolling the cue ball through and leaving a high angle on the black as you normally would.

You are playing with a light white and the reds are normal weight, so you are careful not to play as low as you normally would on a new cue ball because if you did the white would screw back and stop too near the side cushion.

The table rolls off in the opposite direction to the nap near the pink spot and the nap is very strong, so you estimate that the roll off will pull the ball about an inch in the wrong direction and that the nap will pull the ball in the correct direction, again by about an inch. So you aim to play the red in the centre of the pocket.

You play the shot and watch the red roll off near the pink spot and get pulled by the nap as it approaches the middle pocket. It is actually too much off course by this time, but because the pockets are big, the red hits the far jaw of the middle pocket and drops in. You look at the cue ball and see that it has screwed back a little closer to the side cushion than you expected, but that it is still in a comfortable position.

Because you have *observed* the shot properly you can now refine the way you play the table in two ways:

First, adjust how much you allow for the roll off near the pink spot.

Second, how light the cue ball really is. This shot allowed you need to correctly gauge how much height and power you need for future screw, stun and follow shots.

### **Experience.**

Once your attitude supports you in getting the match results you want on any table, you can get OPP down to the point where you can adapt perfectly to any table within a few shots, or a frame at the absolute outside. Adapting to most tables will then be mastered just by relying on experience, and you can now concentrate fully on winning your matches.

One other hint is to act normal if you see a ball rolling off. At least your opponent may later on fall into the same trap. However, if you make the mistake of most players, which is to wave your arm like a traffic policeman in the direction the ball rolled off, you are actually coaching your opponent in how to play on the table – not useful!

### **Watch the break off.**

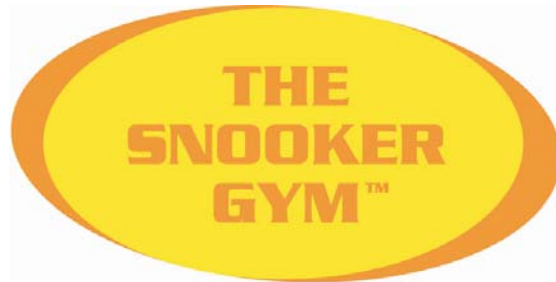
A final tip concerns the time you will learn most about how a table plays - the break off shot.

Before you break off, you should have a good idea of how the following aspects of the table will play just by carefully looking at it; cushion height, cloth speed, pocket size, ball weight, ball cleanliness, condition of spots, lighting and the floor surface.

Whether you or your opponent plays the break off, your job is to keep your eyes glued to proceedings to check out the throw of the cue ball with the side spin applied for the break off shot, the reaction of the cue ball on the pack, the speed of the cloth, the speed of the three cushions contacted on the break off by the cue ball, how much the cue ball sidespin applied distorts the angles off the cushions, how easily the reds break and the level of the table throughout the cue ball's path.

With a bit of experience, you will then be able to completely adapt to most tables after just the break off shot alone. You will then find it enjoyable to pit your wits against the challenge of the next unique table you will have mastered with great speed and ease.

Enjoy, adapt and succeed.



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Angle theory – maths and geometry NOT required!

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Where to aim in the pocket – Phantom Balls & Potting Points.

Aiming – with your nose or a sheet of glass?

Keep the line of aim!

Three requirements of aiming.

What to look at on the shot – lessons from the pro's.

Three reasons for cueing, three more for 'pausing at the front'.

Getting your eyes up, getting your cue back.

Both eye options when striking the cue ball.

What the eyes MUST do.

The three roles of all sighting strategies.

**30 lovely diagrams!**

**[www.thesnookergym.com](http://www.thesnookergym.com)**

**Devised and introduced by Nic Barrow.**

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## Welcome to The Snooker Gym™ Training Guide Series.

The intention of this series is to educate players, coaches, journalists and others who are interested in any or all of the departments of this fascinating sport.

For the Training Guide Series, snooker has been taken down into its' main constituent parts, each one of which has its own edition in the series.

Each guide will give you a stated objective on the front cover, letting you know what you will gain from knowing and applying the information inside.

Within each guide, you will first find a list of headings for an overview of the subject. Underneath each heading will be a rough description of what you will get from each section.

Each section goes into the nuts and bolts of the game, so that anybody wanting to, can derive a fully comprehensive understanding of the game from the ground up. This is particularly useful for individuals studying to become a Snooker Gym™ Instructor, and forms part of the coursework for that programme.

Youth, others learning the game and those still improving their amateur status will also benefit highly from understanding each part of the sport.

This level of detail is NOT, however, suitable for professionals and high level amateurs about to play matches. While useful for pre tournament checks or pre season study and performance development, the professional should always ask for what purpose they need the detail. Their job is to concentrate on the business of winning, and taking their game down to its' finest components just before competition can take their edge off the focus on results.

Other psychological and physical preparation methods found in other tools available from The Snooker Gym™ are more suitable for players of this standard before matches.

It only leaves me to welcome you to this bountiful garden of knowledge I have been fortunate enough to discover, and wish you well in your quest for the kingdom of snooker performance.

Nic Barrow.

Dubai.

January 14, 2006.

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## Angle theory – Full ball, $\frac{3}{4}$ ball, $\frac{1}{2}$ ball, $\frac{1}{4}$ ball and fine cut.

There are hundreds of different angles that one could aim an object ball at, but only one that will send it into the heart of the pocket.

So how do we find that angle? The biggest misconception here is that one needs to be a genius at maths, geometry and ‘angles’.

We shall assume here that you already have a solid basic technique and an ability to move the cue in a straight line, accurately seeing where you are aiming the cue. It is in fact an inability to perform these technical tasks that cause most of the difficulty in aiming, causing the notion that ‘aiming is so difficult’.

Actually, if you had a computerized technique and cue action to match, it would be very easy to learn all the angles because the only variable in your game would be where you were aiming the cue. Thus, through trial and error, you would very quickly refine your aiming ability down to a fine art.

There are practices for developing a straighter delivery of the cue and more central aim to the cue ball in other guides in this series.

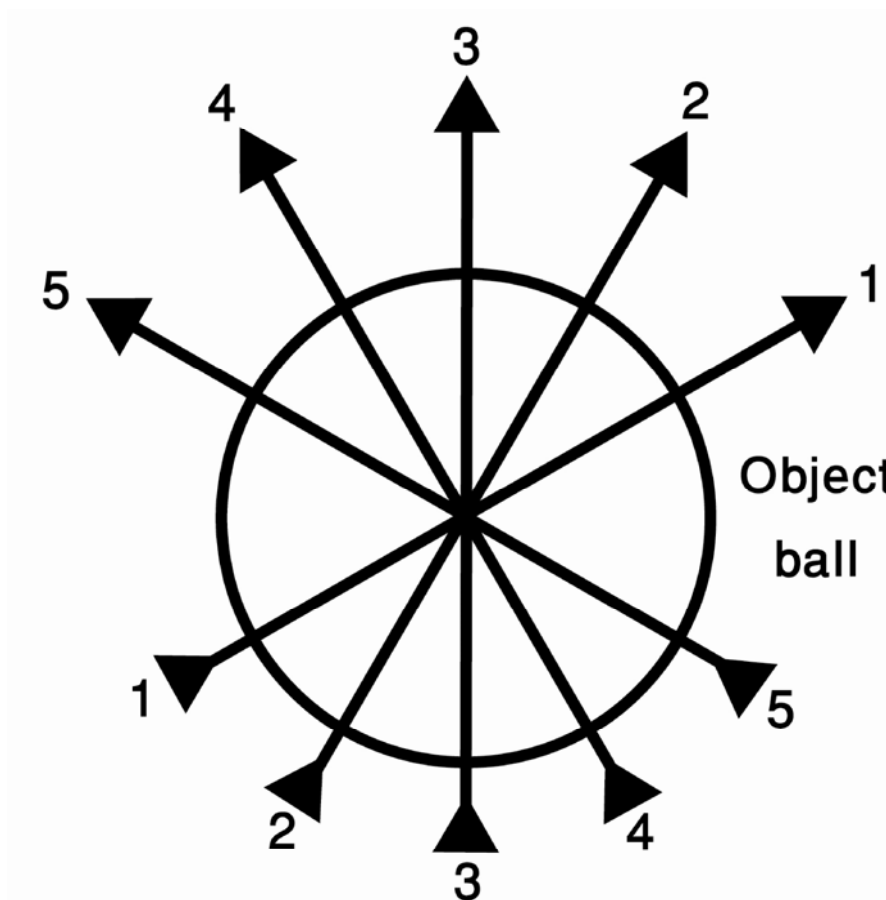


Figure 1.

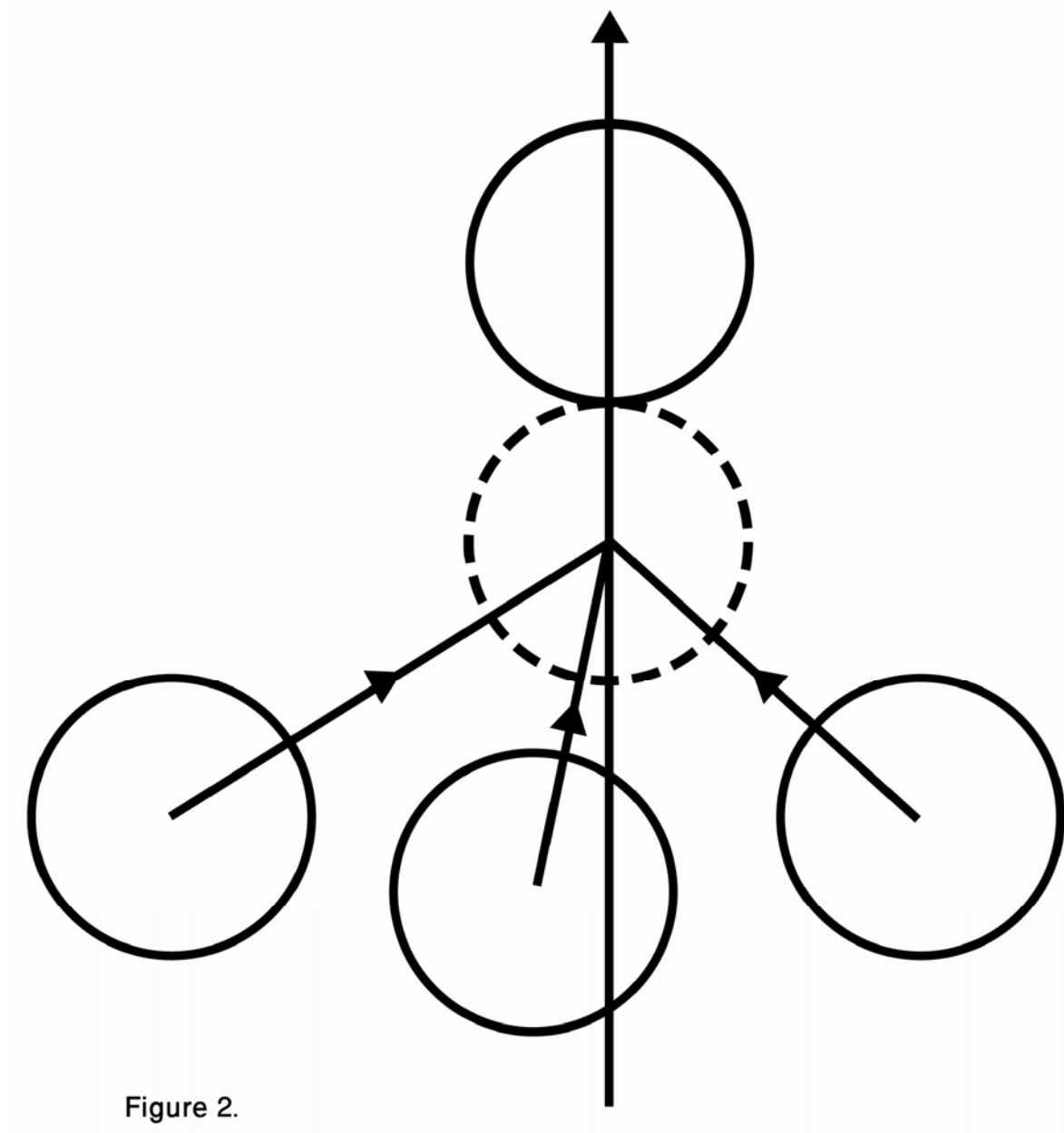
We can see from Figure 1 that whichever target you have for the object ball, there is always a point on the object ball furthest from this target. It is this point on the object ball that you should hit if you wish the object ball to meet its' target.

Now is the right time to mention the fact that any amount of sidespin on the cue ball makes no difference to the path of the object ball. At least not to any players below professional standard, and even they will tell you that the difference made is so negligible, and the use of side so complex, that it is as good as no difference being made to the object ball.

Until you are well into century break territory, there is no need to consider this concept further.

Figure 2 shows a selection of different starting cue ball positions for potting of the same object ball.

It is clear from this diagram that your objective is always to make contact with the point on the object





ball furthest from its' ultimate target, this usually being a pocket.

Figure 3 shows a plan view of the exact angle of a fine cut.

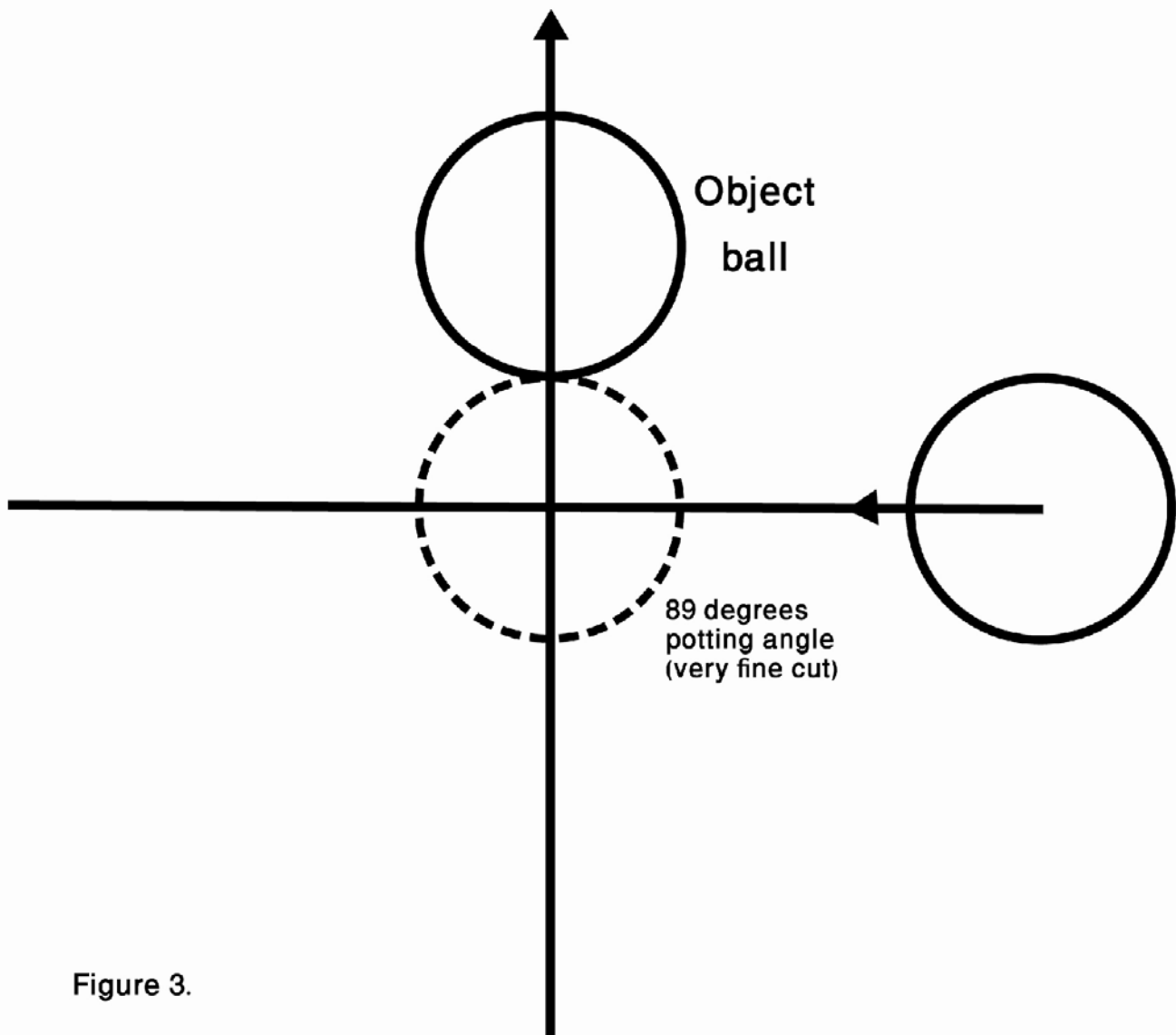
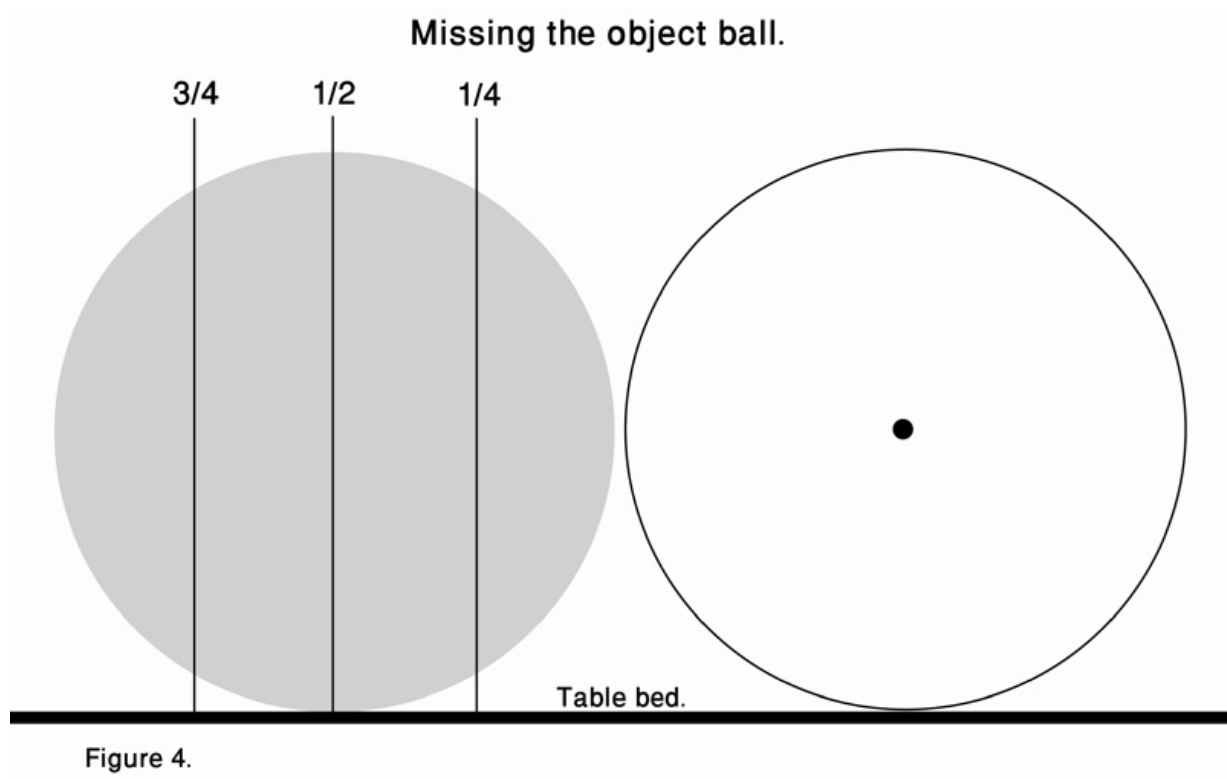


Figure 3.

Figure 4 shows a skill you must master, if you want to master fine cut pots. A player's ability to miss the object ball on purpose by a couple of millimeters will directly reflect their ability to cut the ball on a very thin angle on purpose. If your eyes know what it looks like to miss the ball by a hair's breadth, it knows what it will look like to catch the edge of the object ball by a hair's breadth as well.



The main stumbling block for players to hit fine cuts accurately is a fear of missing the ball completely. Just think of the foul points, embarrassment and sniggers from friends etc! Interestingly, in the 2005 UK Championship final, Steve Davis OBE had a fine cut safety with the cue ball near the baulk cushion and the red he was aiming at on the top cushion. His intention was to play a very fine cut on the red, which he could almost see full ball, and let the cue ball come back to the baulk cushion. He managed to miss the red by the finest of margins a total of six times in a row.

Referee Jan Verhaas, under jurisdiction of the miss rule, kept on replacing the cue ball until Davis struck the red on the seventh occasion. So if Steve Davis OBE can miss a red without blushing, once for every time he has won the world championship, then you can also miss it. As a footnote, Davis lost to eighteen year old Ding Junhui by the score of 10-6, a result that yielded Chinese wunderkind Ding's second ranking event victory.

Figure 5 shows the fine cut as your cue would see it. Here, the object ball is divided by lines into four quarters. The center of the cue ball is also marked to show where the cue is pointing on the various

contact angles. We can see that on the fine cut, the cue will be pointing way outside the edge of the object ball.

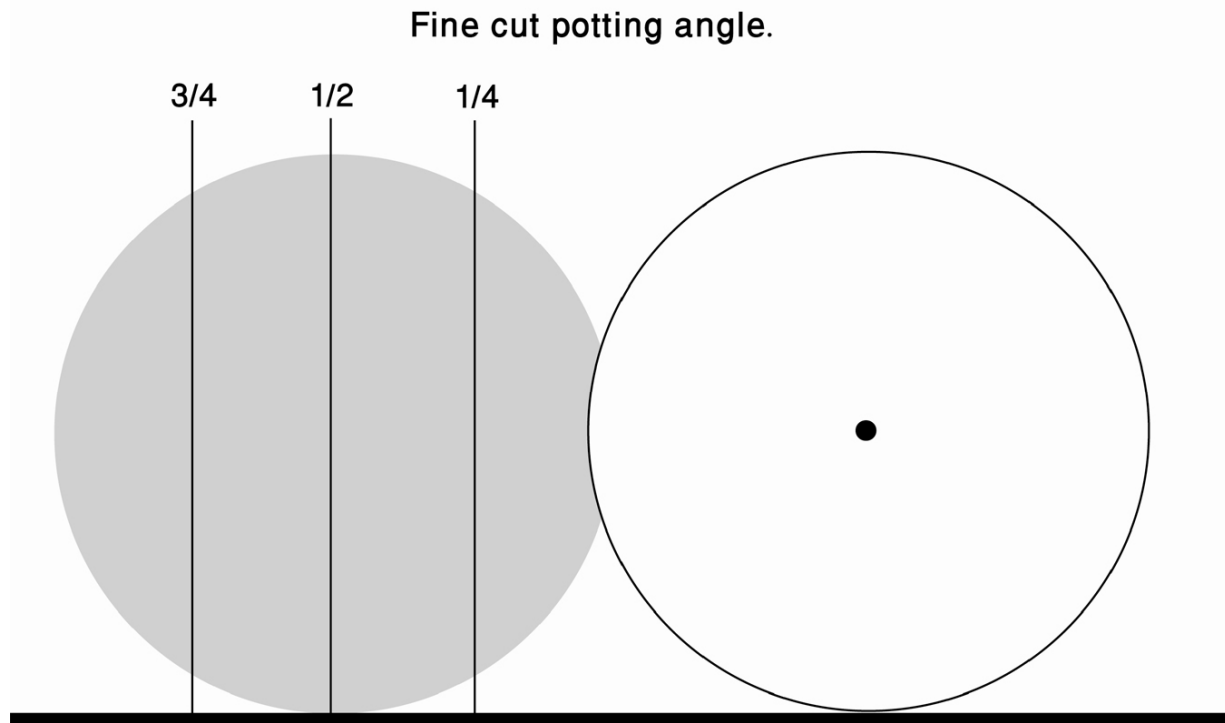


Figure 5.

Figures 6 & 7 show that with a 'quarter ball' contact, the cue ball covers exactly one quarter of the face of the object ball. Cue aim is still outside the edge of the object ball.

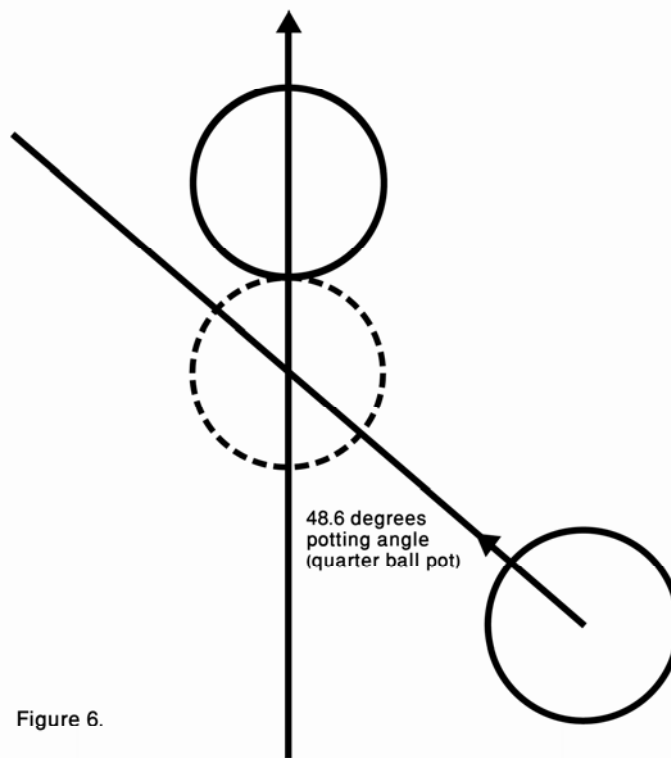


Figure 6.

### Quarter ball potting angle.

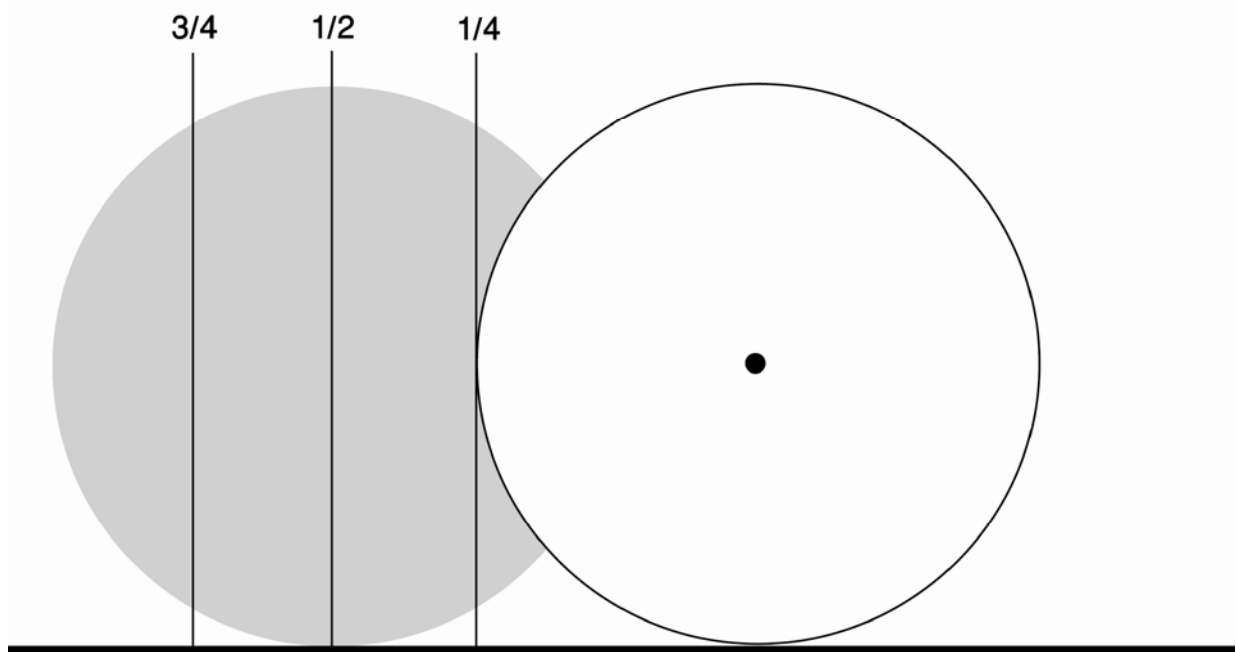


Figure 7.

Figures 8 & 9 show the half ball angle, well used in the game of English Billiards. It is the only angle in the game where the cue has an obvious landmark on the object ball to aim at – the object ball's edge.

Note here that the cue aiming line, contact point on the object ball and proportion of object ball covered by the cue ball are all in a different location. I have known players who try to work out all three of these geometric variations on every shot. This is the fast track to failure, confusion and frustration, especially trying to work out the part of the cue ball that will contact the object ball. You cannot even this part of the cue ball, so why bother trying to work out where it is?

Certainly no pro does this and enjoys the game because it is not the human brain's natural way to select an angle. When you are catching a ball that a child throws to you, I doubt you work out the trajectory in degrees and accordingly adjust your hand placement etc etc... You just do it instinctively, and that is how you will learn to aim your snooker balls by the end of this guide. The potting angles are written here in degrees for reference, completeness and curiosities sake. Don't live your snooker life by them!

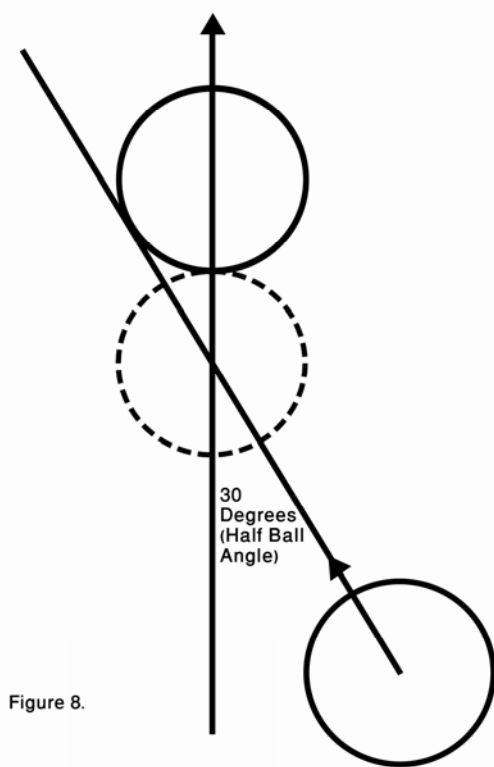


Figure 8.

### Half ball potting angle.

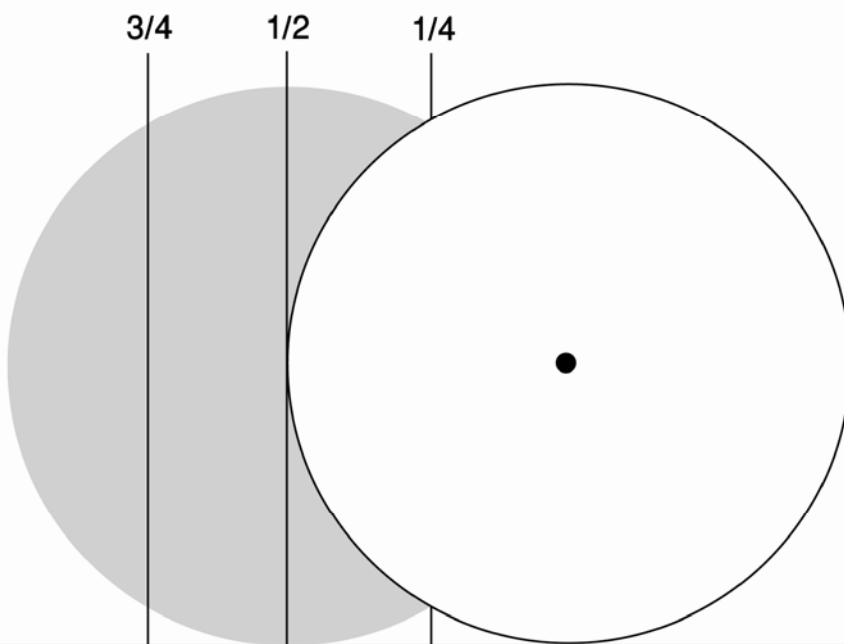
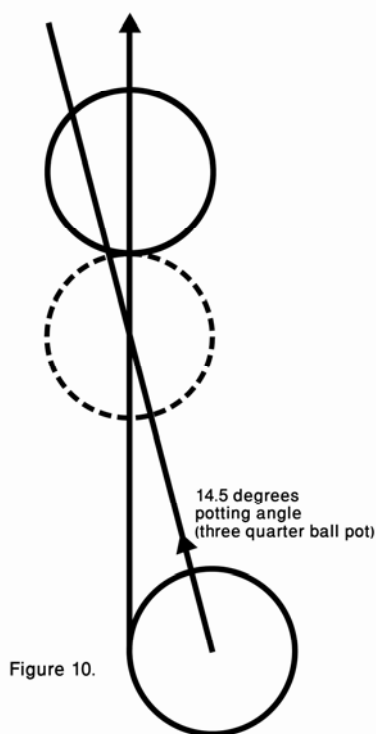


Figure 9.

Figures 10 & 11 show the cue ball covering three quarters of the object ball for a 'three quarter ball' contact. The aiming point for the cue is inside the edge of the object ball, on the quarter ball line of the object ball. The contact point of the two balls lies somewhere in between these two lines.

With a full ball contact, this is the only angle in cue sports where the cue is aiming directly at the contact point of the two balls.





### Three quarter ball potting angle.

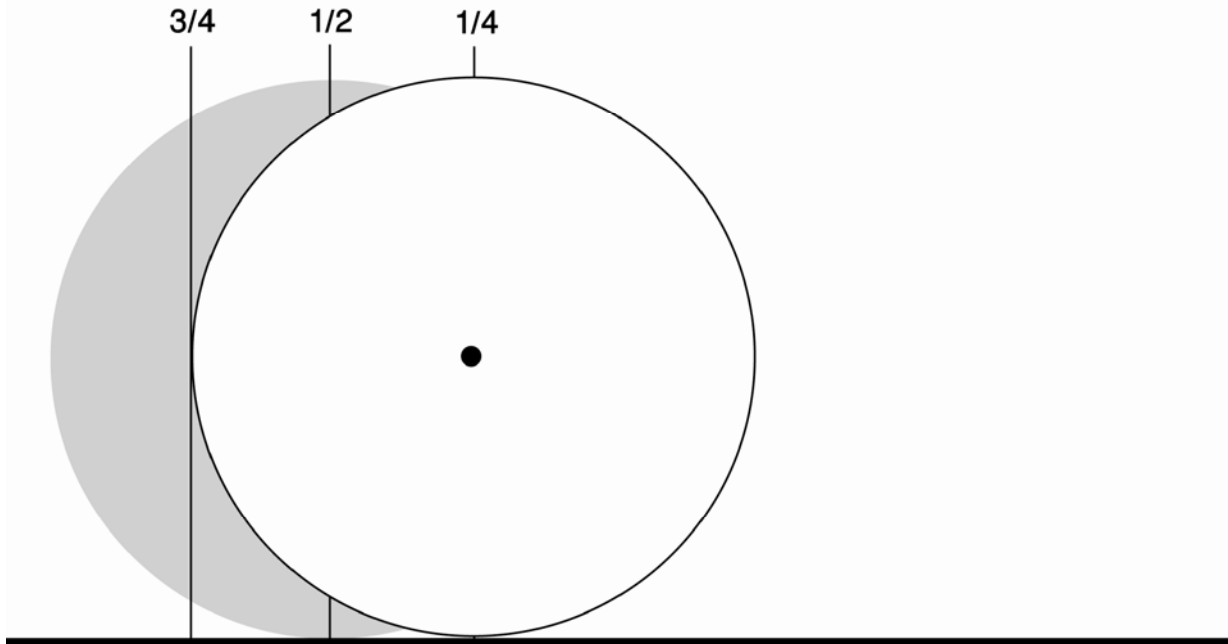


Figure 11.

Figure 12 will dispel another common myth in cue sports, that being the concept of ‘aiming by using the reflection of the lights on the object ball’. I don’t know where this idea came from, but it needs to stay there.

The 'waistline' of the cue ball showing  
the only part of the object ball you can ever hit.

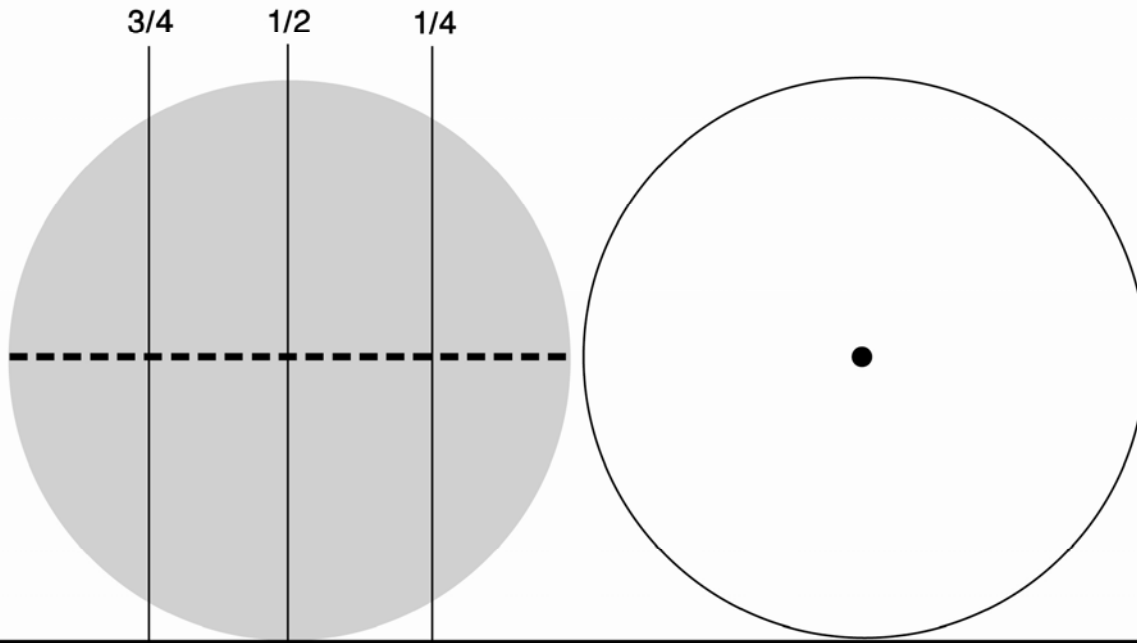


Figure 12.

Every table has a slightly different height of lamp shade, lamp brightness/cleanliness and most lamp shades are slightly off centre to the table anyway. These three variables in themselves make a mockery of trying to workout your aiming point on the object ball by looking at the reflection of these lights. In addition, lights are always ABOVE the table and balls, meaning the reflections are above the centre line of the cue ball. Thus if you look to the reflections, you are taking your eyes away from the actual contact area on the object ball – its central waist belt.

Think about it, there is only a very fine line that we ever strike an object ball. Unless the cue ball is jumping in the air, it is IMPOSSIBLE to strike the object ball above or below this central line.

The only way to have the light reflections on the waist line of the balls would be to have the lights on the face of every cushion, shining horizontally across the bed of the table directly onto the edges of the balls. Even if there were lights on the face of every cushion shining across the table for, say, a ball on the centre spot of the table, you would find out something very interesting. As you moved the cue ball around the table to select different potting angles for this ball on the centre spot, the light reflections would shift around the ball as you moved around the table. The reflections can and never will be fixed, so you will find this method somewhat like navigating to the north pole using the wind as your compass rather than your compass as your compass. You would never get anywhere.

## **BOB and the aiming point.**

It could easily seem to the novice that all these different aiming lines and contact points make the game extremely confusing and the domain only of trigonometry at the higher levels of the game. I don't think there is one player in the top sixteen who has a degree in geometry and trigonometry, so how do they do it? What is the 'secret' to aiming, and how can you make it as simple as the pros find it?

You will be barking up the wrong tree if you think you can work out the correct cue aiming line and simply look toward the direction that the cue is pointing. Half the time, this aiming 'point' will be in thin air somewhere outside the edge of the object ball, and I don't know of anyone yet who has mastered the art of focusing on an oxygen molecule. The other half of the time, the cue aiming point rests somewhere on the surface of the object ball – but always on a point different to the actual contact point between the two balls.

More confusion will arise if you try to aim the edge of the white ball toward the corresponding part of the object ball. It is not as simple as this because the two balls are three-dimensional, not just flat discs

of paper, and again you will be conflicting with the actual contact point on the object ball.

A third way of aiming that may prove difficult is trying to imagine a white ball in front of the object ball in the position the cue ball needs to be when contacting the object ball. Although it sounds easy and a natural thing to do, you may well find your eyes always trying to focus on a specific point. This would make holding the picture in your mind of the imaginary cue ball impossible.

So what are we left with? If you are riding a bicycle around a roundabout, do you try to work out how many centimeters you need to move the handlebars to get to where you want to go? I doubt it. I am sure you look where you want to go and just let your experience of bicycle riding get you there. It is the same with aiming a snooker ball. Look at the actual contact point between the two balls, or 'back of the ball', and let your experience so far in the game take you to potting the ball. Don't worry if you miss, your experience for next time will increase with every miss you make!

You should also remember when listening to this advice that most of the professionals are also just looking at their aiming point and relying on their previous experience when aiming the cue to the right

potting position. You could say that they are simply looking at the back of the ball, and guessing where to aim their cue based on having potted or missed a similar angle hundreds of times before. Hence the benefit of practice! A bit later on we will go into more detail about the different sighting methods available to us.

Some of the pro's may even tell you they know they are aiming correctly on a certain shot, and this is because they have played the shot successfully hundreds of times before. To get to that point of consistency, however, they would have had to guess the angle for a successful pot for a few hours, weeks or years. We could conclude, then, that knowing is simply an advanced form of guessing.

One clarification we need to make here is the difference between guessing your aiming and guessing the back of the ball. While some of you may find pinpointing the back of the ball a very easy exercise, for some it may prove difficult until you get the hang of it. In this instance, you may feel that your aiming and cueing are fine, but that even though you have hit where you have aimed the ball does not go in. This means you need to have more failures at guessing the back of the ball until it becomes second nature to guess it correctly.

As you go through this process, you may settle on focusing on a certain size of point that equals your back of the ball. If you were to hold two balls in your hand so that they were touching, you would see that the actual size of contact between the balls was just a few millimeters. This is the size of spot you should see when looking for your back of the ball. But if you find it more comfortable to view a point one centimetre or so in diameter, then by all means carry on with that if you are comfortable with it and feel it is giving good results.

If you were to expand this trend even further, you would then be aiming in the same way as some of the more instinctive pros. Some of those will focus on no specific point on a ball, but just get a 'feel' for being on the correct angle and allow their eyes to fall into a place that is comfortable for them. This style tends to be employed by the quicker players, and could be tried by you if you wanted to experiment with a different method. Again, a bit more on this later.

Another point to make with regard selecting the actual back of the ball is this. If you are wearing a pair of trousers, you may well be wearing a belt. This will be about half way up the length of your body as measured from head to toe. All the object balls on

the table also have a belt halfway up their body and this is on the fattest part of their waist. This line is the only part of the object ball that you are able to hit with the cue ball, and must be where you are looking when aiming at the back of the ball.

### **Having SAID all that...**

During the International Billiards & Snooker Federation coaching seminar that I was leading in Bahrain in January 2007, I had a very long discussion with one of the delegates on aiming and potting angles.

Michael Kreuziger, the Austrian National snooker Coach, was going through his Master Coach certification when we found we disagreed with each other on the following statement:

"If the half ball pot is exactly a thirty degree angle, then obviously the three quarter ball pot is fifteen degrees, with the quarter ball pot coming in at forty five degrees."

While this seems a perfectly logical conclusion to make, I knew I had gone through all of this at the age of eighteen on my mum's graphic design drawing board until 7 'o' clock one morning.



I remembered having drawn all the various potting angles, and realising that the only way to get the exact numerical answer I was after was to apply the mathematical mnemonic 'SOHCAHTOA' to each potting angle (thanks to Mathematician Mr. Box at High Wycombe's Royal Grammar School for helping me remember this one!)

Although seeming a little on the pedantic side, I knew I had stumbled on something interesting that not many in snooker would have noticed. So I pursued it...

For those who want to know the exact trigonometry behind this, the break down of 'SOHCAHTOA' applied to a triangle where one of the angles is ninety degrees (known as a 'right-angled triangle') is as follows:

Sine (of an angle in a right-angled triangle) =  
Length of \*Opposite ÷ Length of \*Hypotenuse.

Cosine (of an angle in a right-angled triangle) =  
Length of \*Adjacent ÷ Length of Hypotenuse.

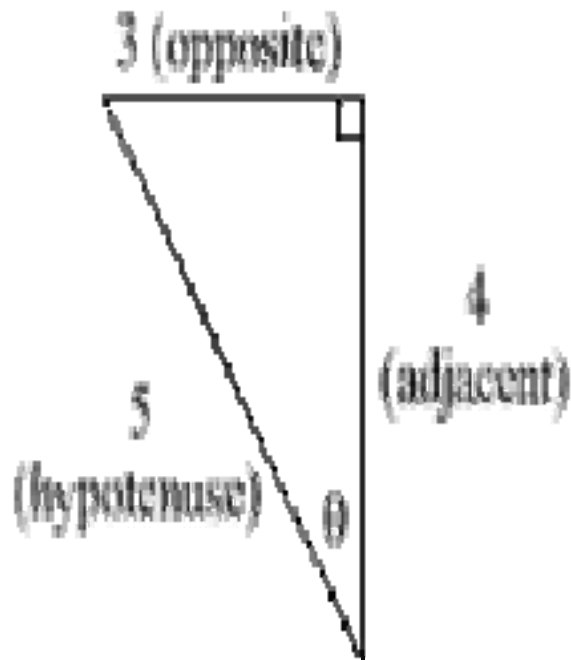
Tangent (of an angle in a right-angled triangle) =  
Length of Opposite ÷ Length of Adjacent.

\* Thanks go to [www.mathwords.com](http://www.mathwords.com) for the following explanatory diagrams:

**Example:** Find the values of  
 $\sin \theta$ ,  
 $\cos \theta$ ,  
 $\tan \theta$ ,  
 in the right-angled triangle shown.



**Answer:**  $\sin \theta = 3/5 = 0.6$   
 $\cos \theta = 4/5 = 0.8$   
 $\tan \theta = 3/4 = 0.75$



During the IBSF seminar, though, these notes were not available in their entirety, my scribbles from decades ago only leaving us with half an explanation. So Michael and I went through the internet and eventually ended up on the NASA website where we got our answers on how to calculate exact potting angles in relation to exact ball contact percentages.

Despite the seminar itself taking nine hours per day, we still managed to stay up until three 'o' clock that morning figuring everything out.

In addition to being Austria's National Snooker Coach, Michael is also one of Austria's top metrologists. Metrology is the science of measurement (whereas meteorology is to do with the weather – which Michael and I care little for as we are always indoors studying this wonderful game!)

I have to give Michael a huge thank you for taking our ten pages of handwritten scribbles and using his genius in using computer software to come up with the following three diagrams, as well as having calculated the exact angles therein with the formulas we discovered.

The plan view diagram entitled 'Object Ball Contacts' shows two interesting points.

Firstly, for a given distance from cue ball to object ball, the cue ball must travel further to make a thin contact on the object ball.

This is one reason that thinner pots are more difficult than fuller contact pots.

Another reason is the visual requirement of the player having to be able to estimate the potting angle.

Yet another would be the slight 'pull' effect the cue ball has on the object ball with a fine contact. Particularly with a worn cloth or dirty balls, this 'pull' effect can often pull the object ball a matter of inches thicker from its intended line with a fine enough contact between the balls. Although the natural learning process of the mind and body usually takes this effect into account without a player of any standard being consciously aware of it, your understanding of the game will nevertheless be increased by knowing that the phenomenon exists.

The last reason will be covered when we discuss the second diagram.

Secondly, you will notice that the Back Of The Ball contact point between cue ball and object ball is

always exactly half way in between the shaded area that indicates the amount of cue ball covering the object ball for a given contact. This will give some answers to those very rare people who try to aim by estimating the part of the cue ball that will be contacting the object ball, in some way trying to match this invisible part of the cue ball up with the Back Of The Ball. Even with this newfound information, though, this sighting method is impossible to employ without experiencing utter confusion and low results and is not applied by professionals, who use the much simpler and instinctive methods that are available.

The table entitled 'Potting Angle vs Object Ball Contact' shows the exact calculations for the main potting angles in all cue sports.

This proves clearly the facts I stumbled across as a teenager on the drawing board.

The varying sizes of balls in the different cue sport disciplines do not affect the measurements as the ratios between balls of the same size will always remain constant whatever their dimensions.

The graph entitled 'Potting Angle vs Object Ball Contact' puts the previous numbers into visual form.

Note that the curve of the line increases at the contact angles approaches ninety degrees. While all the previous information can be seen as somewhat academic, this increasing curve tells us something very important. It relates to a point mentioned earlier, that being the last reason an angled pot is more difficult the larger the potting angle becomes.

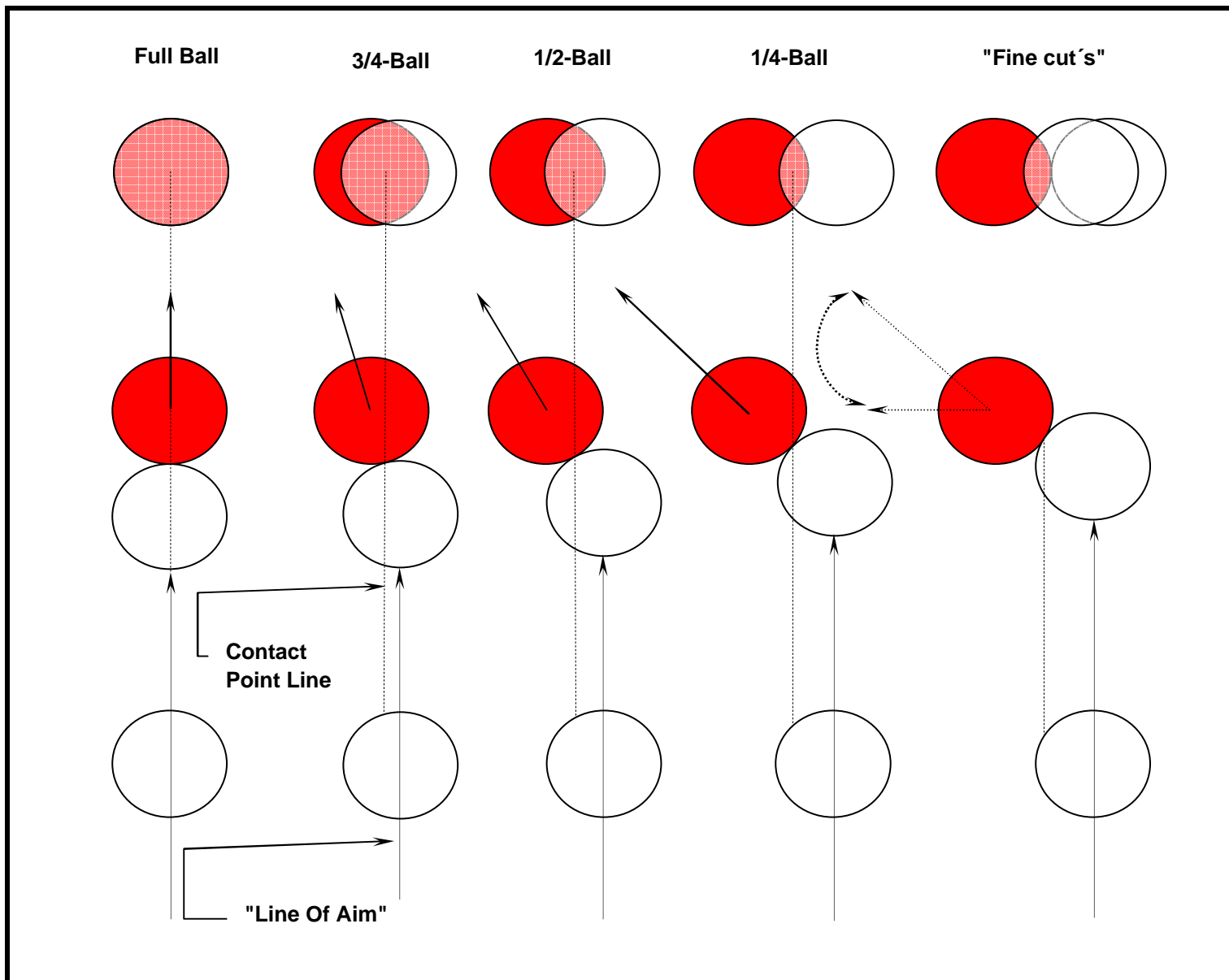
This curve proves that for the same distance from cue ball to object ball, the thinner a pot is the less margin of aiming error one has to pot the ball. In other words, if you send the cue ball one millimeter to the left of where you intend to strike a full ball contact, the object ball would for sake of argument be sent thirty millimeters to the right of the centre of your intended pocket. The pot would therefore still probably go in depending on the speed of the shot, distance to pocket and whether the object ball was facing an open pocket or going down a cushion.

For sake of argument let us assume we are playing a blue off the spot into the corner pocket, with the cue ball being placed on the baulk line.

However with the same object ball position, the same distance of cue ball to object ball but with a

potting angle of say seventy degrees (a fine cut) we would find that the same one millimeter deviation to the left with the cue ball may in fact send the object ball perhaps FIVE or SIX inches to the right of the pocket.

# Object Ball Contacts

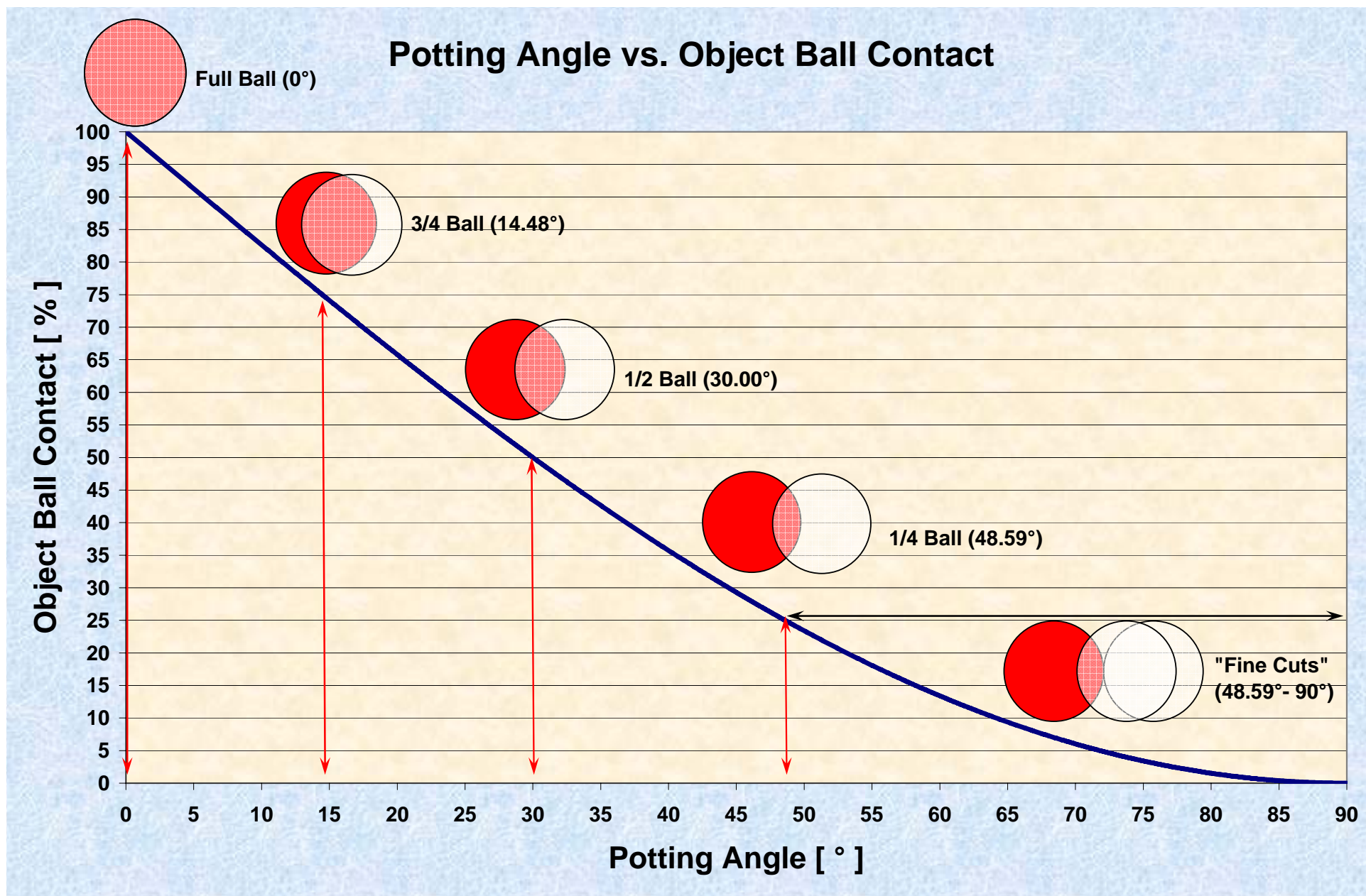




## Potting Angle vs Object Ball Contact

Potting Angle [ ° ]	Object Ball Contact [%]	Potting Angle [ ° ]	Object Ball Contact [%]
0	100.0000	46	28.0660
1	98.2548	47	26.8646
2	96.5101	48	25.6855
3	94.7664	49	24.5290
4	93.0244	50	23.3956
5	91.2844	51	22.2854
6	89.5472	52	21.1989
7	87.8131	53	20.1364
8	86.0827	54	19.0983
9	84.3566	55	18.0848
10	82.6352	56	17.0962
11	80.9191	57	16.1329
12	79.2088	58	15.1952
13	77.5049	59	14.2833
14	75.8078	60	13.3975
15	74.1181	61	12.5380
16	72.4363	62	11.7052
17	70.7628	63	10.8993
18	69.0983	64	10.1206
19	67.4432	65	9.3692
20	65.7980	66	8.6455
21	64.1632	67	7.9495
22	62.5393	68	7.2816
23	60.9269	69	6.6420
24	59.3263	70	6.0307
25	57.7382	71	5.4481
26	56.1629	72	4.8943
27	54.6010	73	4.3695
28	53.0528	74	3.8738
29	51.5190	75	3.4074
30	50.0000	76	2.9704
31	48.4962	77	2.5630
32	47.0081	78	2.1852
33	45.5361	79	1.8373
34	44.0807	80	1.5192
35	42.6424	81	1.2312
36	41.2215	82	0.9732
37	39.8185	83	0.7454
38	38.4339	84	0.5478
39	37.0680	85	0.3805
40	35.7212	86	0.2436
41	34.3941	87	0.1370
42	33.0869	88	0.0609
43	31.8002	89	0.0152
44	30.5342	90	0.0000
45	29.2893		

Potting Angle [ ° ]	Object Ball Contact
<b>0.0000</b>	<b>Full Ball</b>
7.1808	7/8-Ball
<b>14.4775</b>	<b>Three Quarter-Ball</b>
22.0243	5/8-Ball
<b>30.0000</b>	<b>Half-Ball</b>
38.6822	3/8-Ball
<b>48.5904</b>	<b>Quarter-Ball</b>
61.0450	1/8-Ball
<b>90.0000</b>	<b>0/8-Ball</b>



## Where to aim in the pocket.

If you aim for the back of the ball for long enough, you may eventually wonder exactly where in the pocket you should be aiming.

Whatever angle you have on any ball, there is always a part of the pocket to aim at which will give the biggest margin of error to get the ball in. It is this point you should always be aiming at. It is called the 'Potting Point'.

There is an exception to this rule that happens in professional play less than 1% of the time. This is where a player needs to aim toward one side of the pocket to extract an unnatural angle from the shot being played. By aiming into the edge of the pocket, the potting angle becomes distorted. In snooker it is usually employed when a player is much straighter on a pot than they would like, and is desperate to make position for the next ball some distance away.

This is an extremely unusual occurrence, and again is only really needed when one is good enough to be comfortably making century breaks. In American Pool, this strategy is used more often than in Snooker. This is because the size of the pockets are much bigger than in Snooker, meaning that it can often be used without undue risk of missing the ball.

It is assumed, then, that you are always aiming at the biggest margin of error – but where does that lie exactly?

By looking at Figure 1, you will see that there is one Phantom Ball we could aim at to pot a ball if we approached a corner pocket from any angle. This is assuming you are playing on a table with pockets being identical to the one used in the diagram. These exactly mirror the templated pockets found on television tables. The potting line for a ball that crosses this Phantom Ball of course extends into a different Potting Point depending on the incoming angle of the object ball.

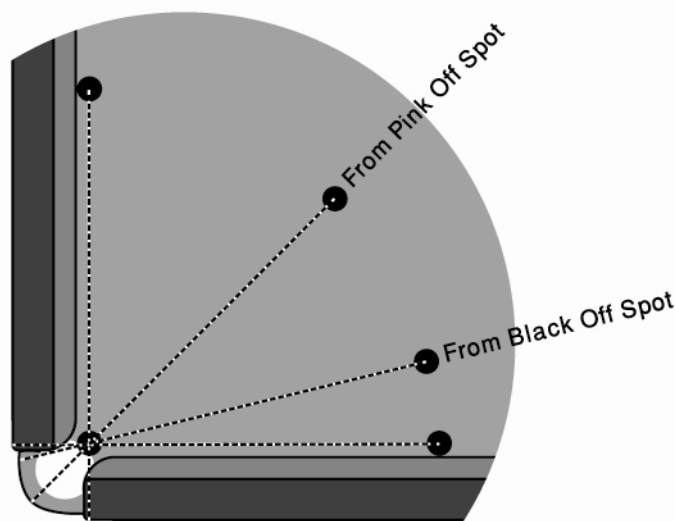


Figure 1

The choice is yours whether you prefer to aim at the required Potting Point or at the Phantom Ball. If

you prefer to go for the Phantom Ball, you simply imagine it sitting there and aim to hit it full ball.

Note also that if you aim your object ball directly to a full ball contact on the Phantom Ball, you will automatically be utilizing the biggest margin of error for potting your ball. The closer the object ball is to a cushion, the more acute the potting angle. The more acute the potting angle, the less margin of error that you have to miss your Potting Point by. With any shot, you must have the same margin of error on either side of your aiming line, however acute the potting angle is.

Figure 2 demonstrates the classic ‘down the cushion shot’, and shows us exactly where on the pocket we should be aiming the object ball. Here, we can see the Potting Point is actually on the wooden part of the cushion rail. Remember, these diagrams are identical to the shape of pockets used on television at the moment. So be sure to select your Potting Points according to the table you are playing on, if it is not a television table. Most clubs have a television table these days, so be sure to ask the owner or best player in the club if they have one. The Phantom Balls usually appear in the same place regardless of the table, but if the shape of the pocket

is different then the Potting Points will of course appear to be in slightly different positions.

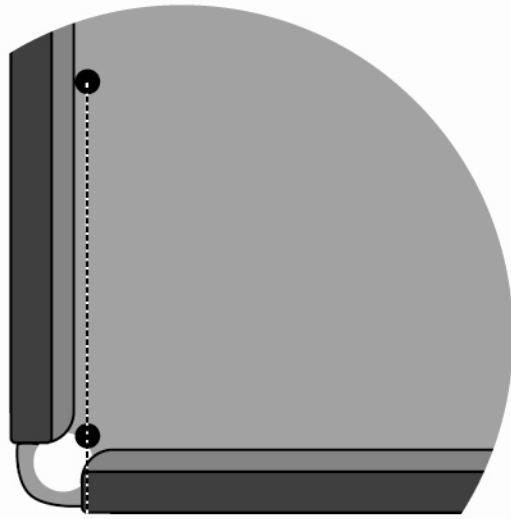


Figure 2

Figure 3 helps us to understand that even though we seem to be aiming to ‘miss’ the pot, the angles of the pocket help us. The more slowly we play this shot, the more chance there is of the ball going into the pocket. This is because there is less bounce back from the first cushion struck. If there is less bounce from this cushion, the ball will slip more easily into the pocket. With more power you get more of a ‘wobble’ or ‘rattle’ effect of the object ball in the jaws, and more chance to miss the pot. This diagram shows the reaction of the ball in a medium paced shot.

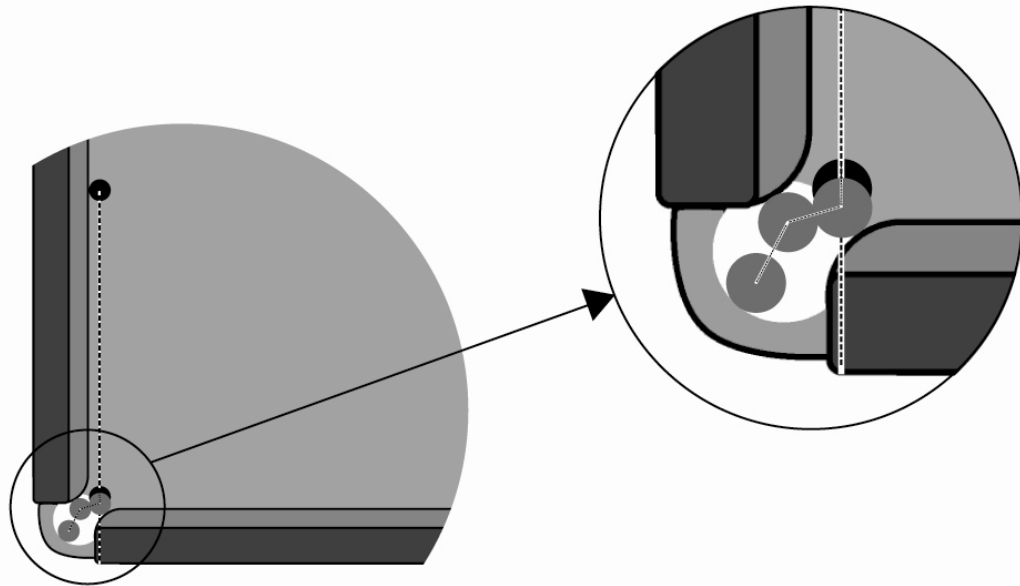


Figure 3

Figure 4 gives us an idea why many players miss shots ‘down the rail’. Simply put, they are aiming the object ball at its ultimate destination. What you must do is aim the ball where it needs to be aimed to *get* to its ultimate destination. It is an easy mistake to make until you can easily select the correct Potting Point on all shots, all of the time.

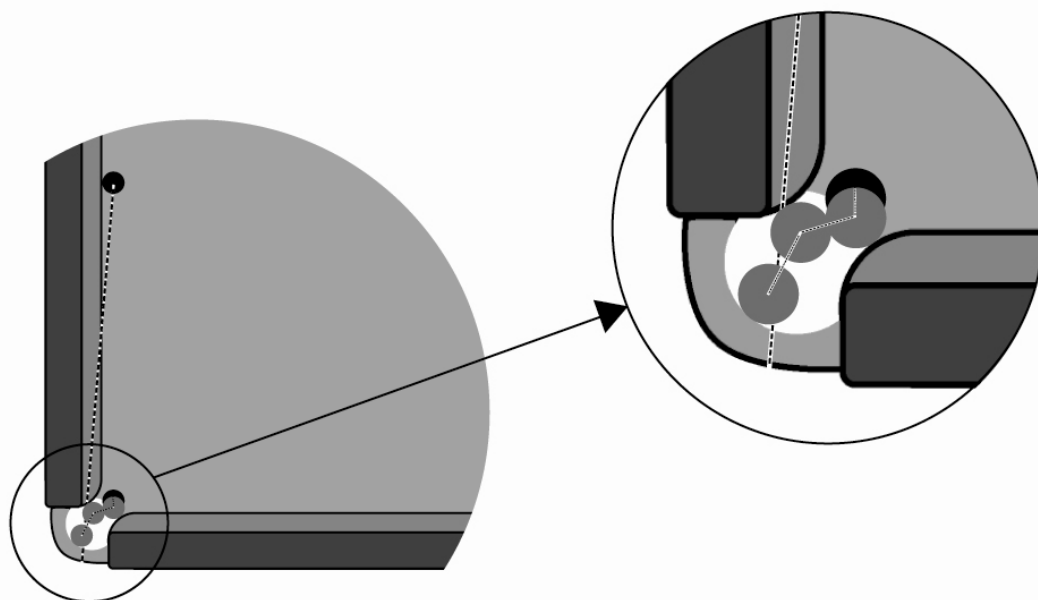


Figure 4

If you prefer using the back of the pocket as your aiming reference, be careful you do not slip into the common mistake of habitually looking to just one ‘favourite’ part of the pocket. It is common for even a professional to lose potting performance by slipping into subconsciously aiming at the wrong part of the back of the pocket. The simple remedy for this is for the player to remind themselves of the correct Potting Point for the angle they are struggling with. Then mercilessly aim for this until they reprogramme their eyes and brain correctly. Remember, the scientific method of aiming we have here can help you programme yourself until you can aim *instinctively*. Sometimes, though, our instincts need a gentle reminder.



Figure 5 shows us the Potting Point for the black off the spot. This Potting Point becomes particularly evident on television when the camera is directly behind the pocket with a player potting the black off its spot.

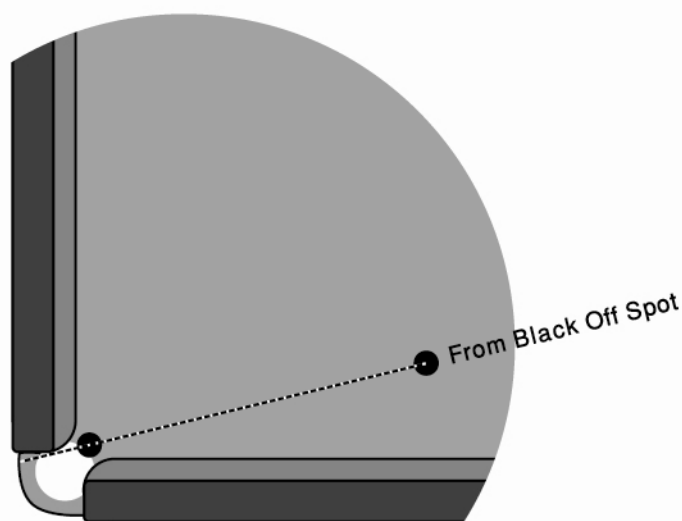


Figure 5

Figure 6 shows what you see on television when the player pots the black. The slight wriggle in the pocket convinces some viewers that the black is not being aimed properly because it is hitting one side of the pocket. This diagram shows the behaviour of a black ball played with power from its spot towards the correct Potting Point. Of course, if the black is mistakenly aimed at not *exactly* the correct Potting Point then there will be a bigger rattling effect in the

pocket. Or the black would miss altogether depending on how far away the black was from the Phantom Ball and Pocket Point.

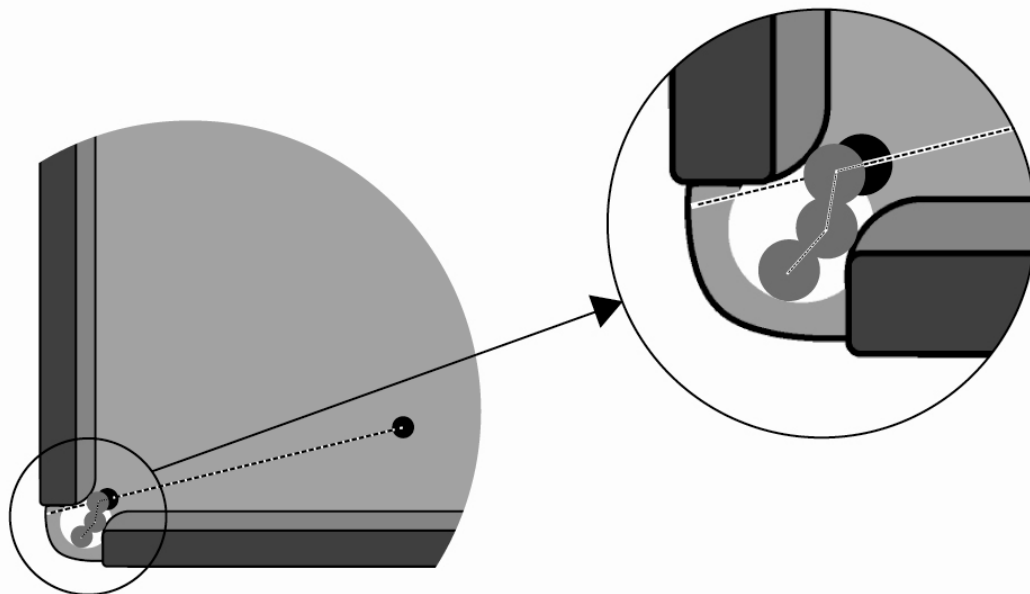


Figure 6

Figure 7 revisits the same aiming problem mentioned in Figure 4. Here, the player is actually aiming at the *centre* of the back of the pocket. This makes perfect sense, right? You want the ball to go into the centre of the pocket, so that's where you should aim, yes? No. Keep to the formula at all times until it is second nature for you.

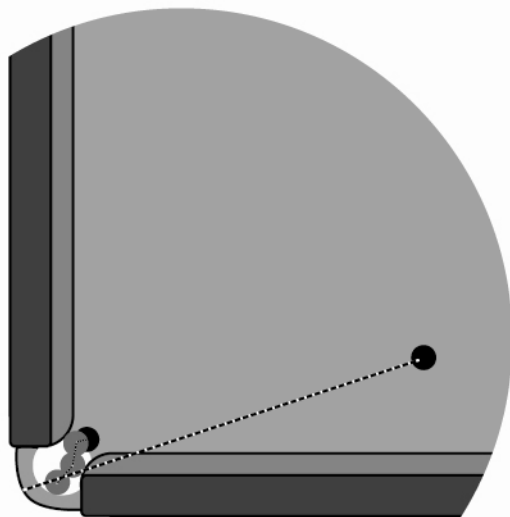


Figure 7

Figures 8 through 12 show that for middle pockets there are two Phantom Balls to aim for. One Phantom Ball is for the aiming sector between the blue spot and pink spot. The second Phantom Ball applies to the more acute aiming sector between the pink spot and a side cushion. Again, each phantom ball extends into a different Potting Point depending on which angle the object ball is coming from.

Figure 8 shows the Phantom Ball and Potting Points for the blue to pink sector.

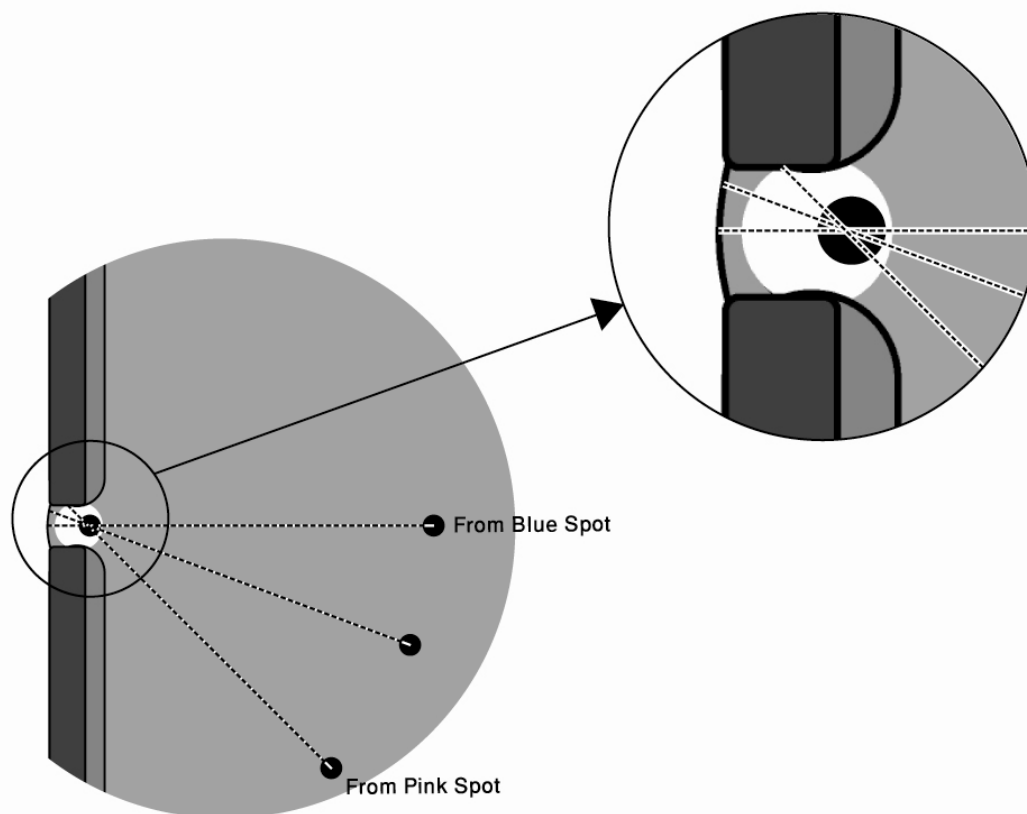


Figure 8

Figure 9 shows another common aiming error. Here, the player has an acute potting angle and as such can only see a limited part of the pocket leather. The near cushion jaw of the pocket obscures the players' vision from most of the pocket leather. In this instance, he has fallen into the trap of aiming where he can see, not where he must.

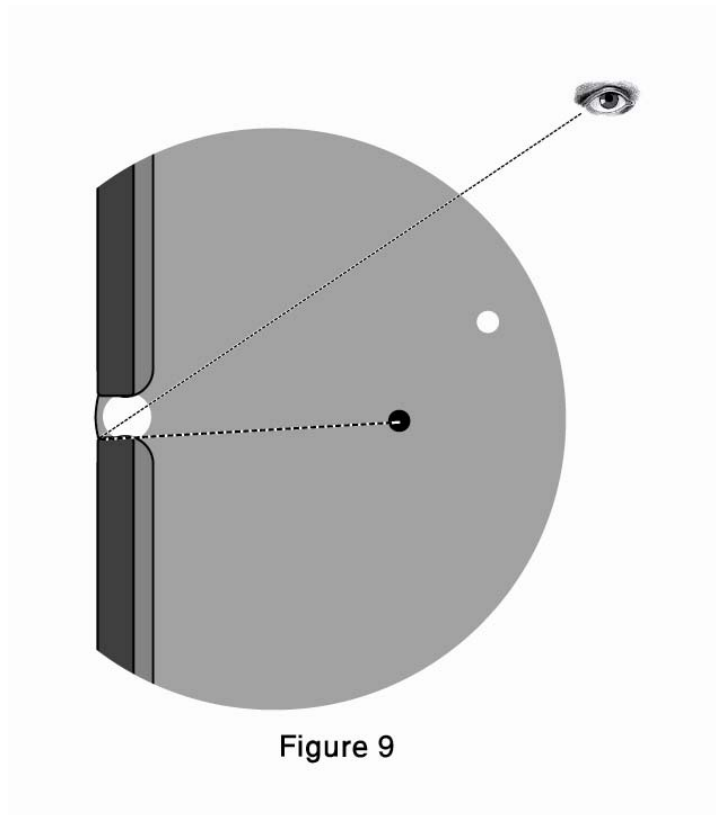


Figure 9

Figure 10 revisits Figure 4's aiming error. Aiming for centre of the familiar and 'safe' pocket leather will not get you the results you want!

Figure 11 brings into play the Phantom Ball that will provide Potting Points for the acute aiming sector between the pink spot and a side cushion.

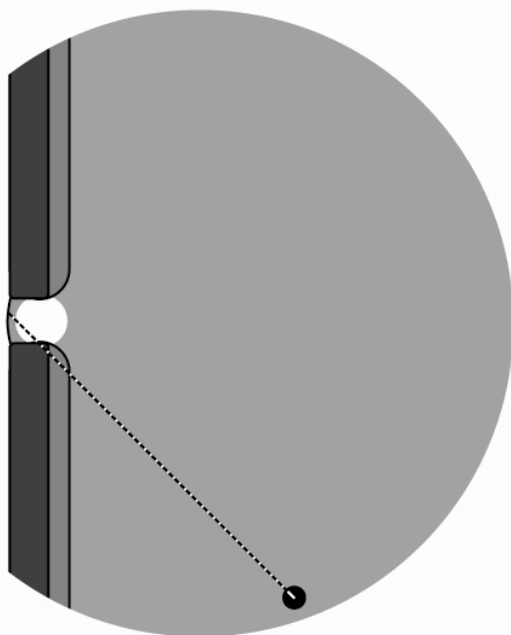


Figure 10

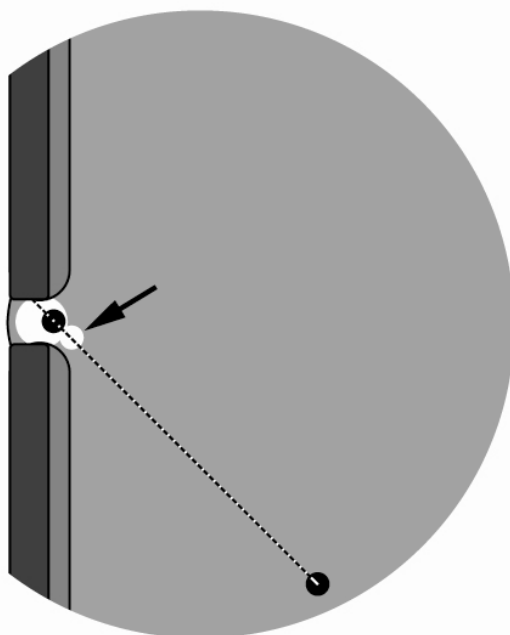


Figure 11

Figure 12 leaves the second Phantom Ball in place, highlighted by an arrow. There are also three acute pots with all their Potting Points shown.

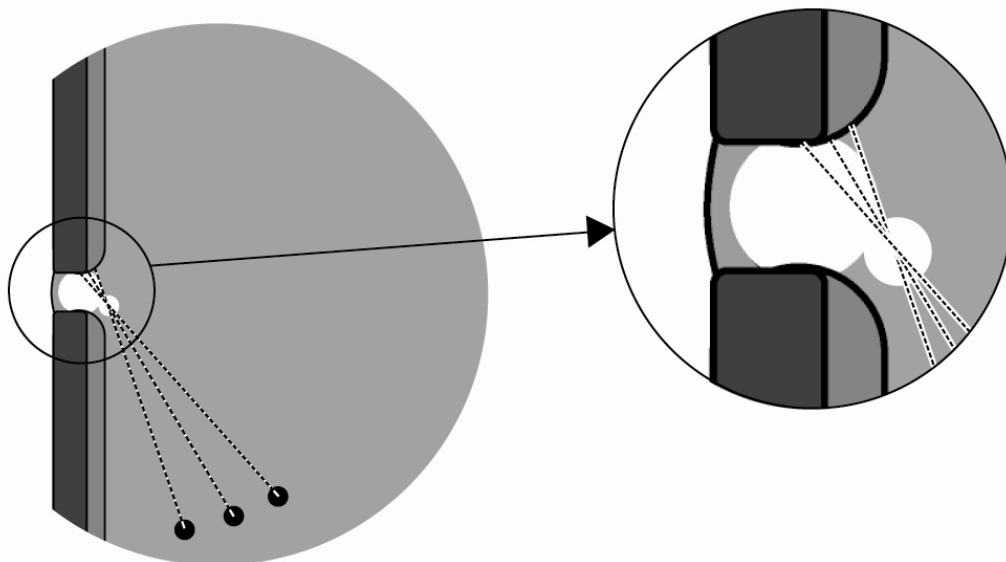


Figure 12

If we look at the Potting Point for the most acute angle, at first glance it may seem impossible that the ball would go in if this Potting Point was mandatory. We may incorrectly assume this, because the Potting Point is actually above the slate of the table bed and not above the empty void of the pocket.

However, by looking very carefully we can see that with this Potting Point the path of the centre of the object ball travels beyond the edge of the slate fall. If the shot is played slowly enough, the ball must therefore go in.

Figure 13 shows an aiming strategy that simply lacks belief in the value of Potting Points. Here, the player is literally scared to visually aim outside the confines of the middle pocket. This leads to a halfway house of aiming between the middle of the pocket leather and the correct Potting Point. Practicing this most acute of angles into the middle pocket is a great way of learning confidence in aiming for your correct Potting Points.

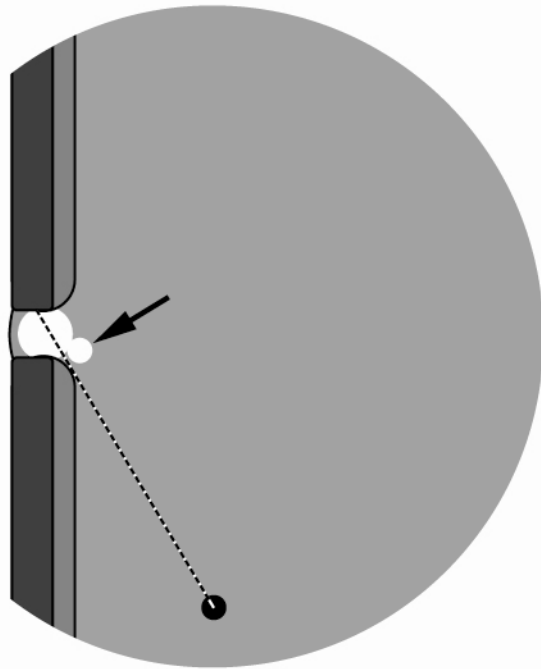


Figure 13

Figure 14 shows how it is possible to pot a ball all the way along a side cushion, past a middle pocket and into the corner pocket. If the table is fitted



together properly the ball will glide smoothly past the middle pocket. If the table is shoddily put together by the table fitter, the object ball will strike the far jaw of the middle pocket as it goes past and get sent away from the cushion.

This amateurish workmanship is unfortunately a bit more common than we would all like.

There was an incident once at the World Championships in Sheffield involving 1983 World Champion Cliff Thorburn. Playing a red with power into the black pocket, Thorburn missed and watched in disappointment as the red travelled slowly up the side cushion away from his intended pocket.

Seeing that he had perfect position on the black with many reds well open, Thorburn was even more deflated when he saw the missed red was traveling at the unfortunate speed required to land directly over the middle pocket.

What happened next amazed everyone in the audience. Obviously coming into contact with a piece of debris, a heavy finger mark in the cloth, or cloth stretch mark near the pocket... the red dropped into the pocket! Thorburn reacted to this situation with complete surprise and his characteristic sense of humour. It went to show that even on the best

equipment at the highest level of this game the unexpected can, and usually does, happen...

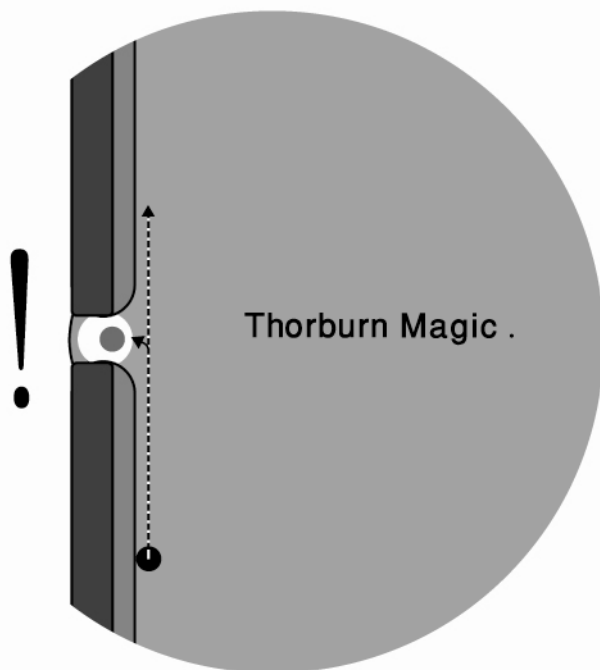


Figure 14

## Standing behind the line.

All potting begins before the shot is played. The most successful players pot the ball before they play it. How?

By ensuring they stand behind the line of aim of the cue ball before walking down to play the shot.

The easiest way to do this is to visualize an imaginary cue ball touching the object ball in the correct position to pot the object ball. Almost like a cinema projector is showing you where to aim. Then ensure that the imaginary cue ball, the real cue ball *and your nose* are all in a perfectly straight line. You *do not* aim the shot with your nose, but use each eye either side of the nose to do so!

It can also help to imagine a huge vertical sheet of glass, from floor to ceiling, crossing these three points.

There are then two separate position options for your feet when your nose is on the line of aim.

First, stand as you would in a queue (forgive the pun) so that each foot is either side of the line of aim, and so that half your body weight is either side of the line of aim. The advantage of this system is that you have an easy sense of balance that tends to relax the

body and prime you for a very comfortable, tension free experience on the shot.

Second, if like most players you stand at the shot with your back foot on the line of aim, you can start with the back foot on the line of aim when you are standing behind the shot. This of course means that if you stand up straight with equal weight distribution left and right, your nose will not be on the line of aim. So you will have to crane your neck to the side somewhat in order to get your nose behind the line of aim. The advantage of this system is that you are planting your feet in an easy line up position for your ideal stance in the shot. This will make it a little easier to slip into said position as you drop into the shot.

## Keeping on the line in the approach.

An exercise I enjoy going through with my clients is it to stand in front of a shot they are playing and simply tell them where their nose is in relation to the line of aim. I do this, usually on a straight long pot from baulk into a black pocket, by holding my cue vertically behind the player's required aiming point on the pocket. I then hold a finger from my other hand behind the cue I am holding up.

I then tell the player to walk down into the shot, and if their nose moves off the line, I move my finger the corresponding amount left or right. The moments that the player's nose is most likely to veer off line is just as they take their first step into the shot, and secondly as they place their bridge hand onto the table and therefore may be a little preoccupied with finding the cue ball rather than keeping on the line of aim.

I keep repeating this awareness exercise until the player self corrects and gets comfortable with the feeling of their nose staying on the line all the way down into the shot.

Once this is a habit, it will hard to get out of doing this as the eyes will have become accustomed

to the great benefits of staying on the line of aim when getting into the playing position.

## First eye movements.

As the player is walking into the shot, I recommend keeping their eyes on the object ball until their bridge hand has touched the table. This ensures the player keeps rigorous feedback on whether they are on the line of aim until the last possible moment.

If the player looks at the cue ball too early, it is very easy to become fixated on it and drift off the line of aim so that by the time they are on the shot they have to aim all over again.

If this happens, it means that in adjusting your aiming when on the shot, you are damaging your balance, comfort, consistency and accuracy. Secondly, it means you are violating the three major requirements of the aiming game. These are:

1. That you do your aiming when you are stood up.
2. That you get into the shot while keeping on the line of aim.
3. That you use the cueing action just to make sure you are
  - a. Moving the cue straight.
  - b. Have a feel for the correct delivery (that you would have also planned when stood behind the shot).

## **Middle eye movements.**

When you are down on the shot, what balls should you be looking at? This is a question I hear all the time, and the answer is simple and also slightly different for every player.

The three objectives of your eye movements are:

1. To check that you are on the line of aim.
2. To check that you are easily focusing on the object ball and where you need to hit it.
3. To check that you are aiming the tip of the cue at the correct part of the cue ball (that you would have selected at the planning stage when stood behind the shot).

With this in mind, a lot of professionals have different ways of going about this. Generally, however, they will spend a bit more of their time checking the cueing position at the cue ball than they do looking at the object ball. This is because when they are checking the cueing position on the cue ball they can peripherally see the line of aim, but when looking at the object ball, the cue ball is such a small object in relation to the line of aim that it is tougher to gauge where they are aiming the tip on the cue ball.



This peripheral vision is a very important part of checking you are on the correct line of aim and ready to play the shot, and this is the reason you will get more benefit from a leisurely series of cueing actions rather than trying to race through them. Your brain will simply have more time to register what is going on around it with this style of movement. You will also get much more feel of your arm and what the cue is doing if the cue is smoothly being guided like a romantic Gondola in Venice rather than a speedboat in the latest James Bond film.

So when they look at the object ball, what are the professionals *actually* looking at? It varies, and depends partly on how they first picked up the game, what they were taught back then, and even their individual personality in life.

Here are the four main ways of focusing:

1. Some will look very studiously and accurately at the precise back of the ball.
2. Some will just glance at the object ball to get a general sense of where they are sending the cue ball.
3. A very small number of players may try to visualize an imaginary cue ball at the correct contact point on the object ball. This last approach often leads to confusion and

distraction, is not very reliable, and results can usually be bettered using one of the other two techniques.

4. The last approach is one that some pros employ, that being having no idea or conscious awareness of what they look at or when. This is the classical instinctive player who may be like Goran Ivanisevic in tennis. It is not to be discouraged if a player has learned the game this way and applies it consistently enough to have confidence in their ability to perform under pressure in match situations. You do not always have to know exactly what you are doing to be able to perform well and this all comes back to personality.

If you are a person who likes detail and order in your life you will probably settle on one of the more deliberate approaches - not just in your sighting but in many areas of your game. If you are a more easy going person who is just happy to make spontaneous decisions and leave things where they lie, you would probably be more comfortable with one of the more instinctive approaches.

## Last eye movements.

When your cueing actions have done their job of:

1. Confirming your straight cueing.
2. Confirming your aiming is correct.
3. Confirming accurate tip placement on the cue ball...

...you are ready to gear up for the final backswing and strike.

One of the most important common denominators in all professionals is that whatever style of sighting a player adopts, they have a consistent method of sighting at this stage, and the backswing and strike, for every single shot they play.

Conversely, if you do not have this method drilled down into an unbreakable rhythm and habit, you are asking for trouble and can never find true consistency in your game, confidence and cueing delivery. If you watch a professional long enough to detect their own eye patterns and sighting style, you may eventually notice a shot where they don't keep to their normal method. This is the shot they usually miss, even though they are amongst the best in the world. This is most likely to happen when a player is under maximum pressure, or when playing a shot

that does not have a simple potting angle and / or positional element.

So what to look at before the backswing. You will notice that almost all pros 'pause at the front'. This means that after they have finished their cueing actions:

1. They will make a final check that the tip of the cue is placed correctly on the cue ball.
2. They will use this checking time to ensure that they are physically comfortable in this position.
3. They will also check they are poised enough that the cue is calm and still when in the resting position on the cue ball.

If, before the backswing, the cue is not as still and stable as a lion about to pounce, then you can rest assured the delivery will only compound that error of imbalance. This final check will give the player a chance to stand up from the shot and get down again if they sense any imbalance in their body or movement in the tip.

The amount of time spent in this final check mode at the cue ball (or 'pause at the front') varies from person to person. It depends on:

1. Your general standard and familiarity with the game.

2. Your instinctiveness as a player.
3. The speed you can focus your eyes on the balls.
4. Your general cueing action rhythm.

To put a number on it, this time period ranges from a fraction of a second up to as long as one second. This ultimately depends on what feels most comfortable for the player.

## **Backswing eye movements.**

Once in the ideal set up position for a balanced and accurate backswing, you now need to get the cue into the final position it will be in before making your delivery into the cue ball.

Getting the cue into position for the final delivery is the only function of the backswing. However, it appears that a lot of players in your local club are attempting to strike the cue ball merely with the force of the backswing. Noooo! All you need to do is slowly move the cue back the appropriate distance for the power you need. This is why it is so important to mentally plan the location of cue ball and corresponding power of stroke before you get down to the table. Your cueing arm then has a clear target for what to do when on the shot, rather than guessing and stabbing in the dark.

Generally speaking, the more slowly you bring the cue back on the backswing, the more awareness you have of exactly what the cue is doing. You will also have more control over bringing the cue back, exactly the right distance for your desired power, and also in as straight a straight line as possible. Some players mask their inability and lack of confidence to

move the cue in a straight line by bringing the cue back very quickly, or a very short distance, or both!

I always recommend that a base level skill any player has **MUST** be to volitionally move the cue in its full range of movement back and forth in virtual slow motion. When they are able to do this, their natural style of cueing will emerge without any of the artificial avoidance techniques mentioned above. They will then be happier as players and performers, in the same way that a solo violinist must have complete volitional control over every movement the bow makes... otherwise things won't sound good!

As we have covered the physical cueing aspect of the backswing, we can now cover the sighting patterns that accompany the backswing.

There are essentially four patterns available to you, and each assumes that your eyes will be resting on the object ball at the end of the backswing. We could go into the concept of having your eyes on the cue ball when the cue is at the end of the backswing. However, almost all pros and successful amateurs either by accident or design find their eyes on the object ball at the end of the backswing. So if it is good enough for most world champions, it should be good enough for you!

The four methods appear below.

1. Look up from the cue ball to the object ball. After focus is gained on the object ball, start and finish the backswing. The reason this method is not used often is that it tends to take too much time overall to maintain a nice rhythm. If both looking up to the object ball and making the backswing can be done at the same time, then why break them up into separate procedures? A sense of impatience and wanting to rush may creep into your tempo and backswing with this method. This is why I recommend, and why most pros adopt, methods 2 or 3.
2. As the same moment that the cue starts moving back, the eyes start moving up to the object ball and stay on the object ball until the backswing is finished. This style suits players who have a compact backswing, brisk style and want to keep the overall elapsed time of their shot to a minimum.
3. Keep the eyes on the cue ball as the cue starts moving back. About half way through the



backswing, the eyes start moving toward the object ball. The eyes are finally focused on the object ball at the same time the cue stops at the end of the backswing. The advantage of this method is that you gain some visual feedback on whether the cue is moving back in a vertically and horizontally straight line. This method also generates a sense of rhythm and movement. This rhythm can be lacking with the second method that requires somewhat of a stop start approach.

4. The eyes remain on the cue ball throughout the backswing. When the backswing has stopped, the eyes lift from cue ball to object ball. The advantage to this method is that whilst looking at the cue ball, you will gain 100% feedback on whether the cue is moving back in a straight line or not. This method is rarely employed by any pros because if they do want feedback on cueing straightness during the backswing, the feedback gained with method two is generally enough for them. From this feedback from method two, they should feel confident the cue will remain straight for the rest of the backswing.

## Eye movements during the strike.

With the eyes on the object ball and the cue at the starting position for delivering the required amount of power, there are two main methods that pros settle on and that will work for you.

1. Keep the eyes on the object ball throughout the cue delivery.
2. Keep the eyes on the object ball as the cue delivery begins. Before the impact of the tip into the cue ball, drop the eyes onto the cue ball. After the cue ball is struck, pull the eyes up to the object ball again.

In theory, there are many reasons why method two should be more desirable, but two main reasons that cancel out these benefits for many players.

Lets look at the theory first, before discussing the reality.

The benefits of method two are:

- A. You can check that the tip of the cue is striking the correct part of the cue ball.
- B. You get a tremendous amount of visual feedback on how the cue behaves when

striking the cue ball. This is, after all, the most important moment in snooker. If the cue is going through the cue ball with little vibration and whip, you probably have a near perfect delivery. If, however, the cue is seen to be slapping the cue ball and almost riding off the cue ball on impact (due to perhaps an ineffective grip hand or not enough cue acceleration) then a lot of force will be lost that could be used to propel the cue ball forwards. In this situation, you will have to apply more cue power than necessary to get the desired cue ball speed. This will result in more body movement and therefore less accuracy. The job of the cue is to push the cue ball forwards, not to be pushed out of the way by the cue ball! Scientific tests reveal that if the strike buries itself through the cue ball in a smooth, progressive, harpoon-like way that the cue ball will deviate less for a given amount of accidental side spin. If the cue slaps the cue ball and gets deviated more than necessary by the cue ball in its delivery, the cue ball deviation for a given amount of side will be more. As no player

can always strike the perfect centre of the cue ball all the time, a very smooth strike and deep acceleration into the cue is thus very important.

- C. You get good visual feedback on whether the cue is moving in a straight line on follow through.
- D. You will also be more aware of the exact sound of the cue as you strike the cue ball, than if the focus of your mind is already on the object ball. The sound of the cue is a big giveaway for the quality of your strike, in the same way that a perfectly struck tennis ball or cricket ball sounds 'sweet'. In tennis and cricket, though, there are two variables for the sweet sounding strike for a given speed of shot. First, where the ball is striking the racquet/bat. Second, the acceleration of the racquet/bat on impact. In snooker the acceleration is the only variable. With one variable it is easier to gain feedback and improve at what you are doing. Admittedly, where you are striking the cue ball height wise or side spin wise

makes a difference to the sound of the strike. But this variation in sound is fixed, such that if you played ten straight shots at the same height on the cue ball the cue would sound the same if your cueing acceleration were the same.

- E. It is easier to deliver the cue perfectly straight if you are looking at the cue ball when striking the cue ball. As the diagrams in this book show, the line of the cue assuming centre ball striking does not point toward the contact point on the object ball. It simply points toward the centre of the cue ball and line of cue ball aim. Hence, because where attention goes energy flows, there is a tendency for some players to actually aim their cue toward the contact point on the object ball. This is obviously the wrong line of aim. So what their cue (under instruction from their unconscious mind!) tends to do is sweep across the cue ball at the last of cue delivery. This ensures the cue is on the right line of aim for potting. You can occasionally see pros doing this if you look

carefully. Therefore, if you look at the cue ball when you strike the cue ball, there is no object ball to distract the cue's line of aim.

- F. It gives the mind something interesting and absorbing to do, thus increasing attention and concentration. Think about it, it is easier to keep your attention when you are juggling than if you are just looking at juggling balls held still in your hand. As there is more going on, your mind is able to latch onto it and keep itself involved. Ever seen a cat watching a moving ball? She is transfixed, right? If the ball stops moving, the cat usually gets bored and walks off. The same applies with this sighting method. As long as the player is confident in her ability, the more going on to keep her attention transfixed, the better.

Now that we have discussed the theory, we can discuss the reality. These benefits seem to carry a lot of strength on their own. For the players who use this sighting method the benefits are compelling, if not consciously then on an unconscious level.

What often overrides this and causes a player to keep their eyes focused on the object ball as they strike the cue ball are the following:

- i. They have faith in their delivery of the cue without needing to look at the cue.
- ii. They feel more assured and in control of what they are doing with their attention on the ultimate target (object ball) rather than the intermediate target (cue ball). We know that the real ultimate target is the pocket. But you are not in control of the pocket, you are only in control of the balls and therefore need to keep your attention on one of them.

The method you ultimately choose will often be down to your style of play and personality, and will often be unconsciously selected when you start playing the game. Whatever the case, it is useful for your knowledge and level of choice in the game to know the benefits behind both options.

## Post shot eye movements.

So you have now played the stroke as mentally planned when you were standing up. The white ball has just made contact with the object ball on the correct line of aim, and contact point, that you also selected when you were stood up. The object ball is now making its way toward the heart of the pocket, so where do your eyes go now?

There is a school of thought that says your eyes should remain on the spot that the object ball occupied, almost as if you keeping your eyes still will give you similar benefits to keeping your body still after the stroke.

This is certainly a useful practice to apply once in a while if you tend to ‘rubberneck’. This means to follow the object ball with your head as if the two are attached together with a piece of string. You have no doubt seen this at the local club, where a player seems to move involuntarily after they play a shot. ‘They’ do this especially if they know they have missed the shot – almost as if moving ‘their’ head will magically pull the object ball back on line. I sat ‘they’, because I know *you* would never do such a thing!

I have yet to find any piece of string that does exist between a players head and object ball, so you



can rest assured that it is okay to remain still after you play the shot. Then simply let your eyes follow the object ball into the pocket, or all the way to the cushion if you do not pot the ball. Or in the case of a safety shot, the cue ball is usually your primary objective so let your eyes follow the cue ball until it reaches its final destination.

This is why I only say it is useful to apply this ‘eyes still’ method once in a while. Your default eye setting should be to follow the object ball all the way into the pocket, or all the way to the cushion if you do not pot the ball. The ‘eyes still’ method will simply help you to cut the imaginary string between your head and the object ball and help you give yourself permission to remain still after you play the shot.

Remember, everything you do on the table must be under your volitional control if you want to be the master and commander, thus gaining a sense of pride in what you do. The example I usually give to my clients is that a small baby in a pram waves its arms around uncontrollably, but that I am sure my client has control over their bodily activities and functions. So if that is the case, I am glad they will now stay still on every shot after they play it. As well as have the patience to watch the ball to the pocket every time.

Remember when you were ten years of age and you could lie down on your bed and stay perfectly still. The feeling after you play a shot is similar to this until the ball goes in to the pocket, or hits the cushion if it was not potted.

The benefits of following the object ball to the pocket with your eyes are:

- i. It gives the mind something to latch onto, thus increasing attention and concentration.
- ii. You will learn what the actual path of the object ball going to the pocket looks like, instead of running away from this reality. Knowing this will help you accurately plot its direction to the pocket next time around, and also helps you plot the required cue ball line of aim. Knowing what this path looks like will also help you to confirm if you are in the correct aiming position on the shot. Having learnt the shot until the correct path is obvious to you, it will become more obvious if you have selected the incorrect path.

- iii. You will get feedback on the speed and straightness of the table, which helps you adapt your game to the individual table you are now playing on.
- iv. You will accurately know the results of your snooker stroke. Facing reality forces you to improve it. Avoiding reality means you can never know what reality is. You can only improve what you are aware of. If you were flying to Dubai, before you checked into the Hilton for your meeting it would be useful to first confirm you had not landed in Abu Dhabi by mistake. It is so important to know exactly how much you missed the pocket by, to which side of the pocket or even if the object ball went into the centre of the pocket or slightly to one side of it. Most players beneath century break standard do not know the answer to where their object ball went even if you asked them. Which is why they have not progressed past century break standard.

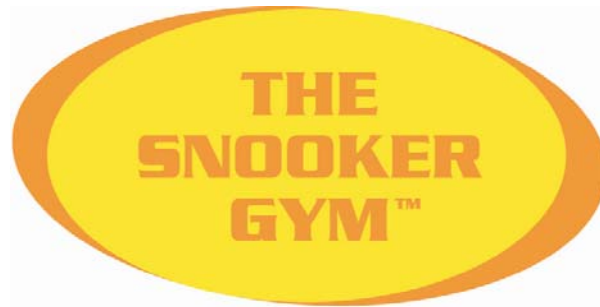
Some players will argue that they find it easier to see if the ball is going in if they are in the standing

position. I agree with you that it may be easier on certain shots. But what difference does it make if you know the success of some pots a quarter of a second earlier? It will benefit you far more to make the commitment, in advance, to have the habit of staying down on all shots until you know the object ball's exact destination.

Overall then, the role of our sighting strategies is:

1. To be aware of what's going on with the cue relative to the balls.
2. To know this at the appropriate time.
3. To get accurate feedback on how we have played our stroke.

There is no hard and fixed pattern for everybody. The exact sighting patterns you use may evolve slightly as you gain more trust in your natural style of play, get more physically comfortable in your position on the shot, and improve your standard.



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**Devised and introduced by Nic Barrow.**

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## **Welcome to** **The Snooker Gym™ Training Guide Series.**

The intention of this series is to educate players, coaches, journalists and others who are interested in any or all of the departments of this fascinating sport.

For the Training Guide Series, snooker has been taken down into its' main constituent parts, each one of which has its own edition in the series.

Each guide will give you a stated objective on the front cover, letting you know what you will gain from knowing and applying the information inside.

Within each guide, you will first find a list of headings for an overview of the subject. Underneath each heading will be a rough description of what you will get from each section.

Each section goes into the nuts and bolts of the game, so that anybody wanting to, can derive a fully comprehensive understanding of the game from the ground up. This is particularly useful for individuals studying to become a Snooker Gym™ Instructor, and forms part of the coursework for that programme.

Youth, others learning the game and those still improving their amateur status will also benefit highly from understanding each part of the sport.

This level of detail is NOT, however, suitable for professionals and high level amateurs about to play matches. While useful for pre tournament checks or pre season study and performance development, the professional should always ask for what purpose they need the detail. Their job is to concentrate on the business of winning, and taking their game down to its' finest components just before competition can take their edge off the focus on results.

Other psychological and physical preparation methods found in other tools available from The Snooker Gym™ are more suitable for players of this standard before matches.

It only leaves me to welcome you to this bountiful garden of knowledge I have been fortunate enough to discover, and wish you well in your quest for the kingdom of snooker performance.

Nic Barrow.

Manama, Bahrain.

January 30, 2007.

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## Height & Power & Side.

Throughout The Snooker Gym series of products, I mention numbered codes on how to strike the cue ball.

Below is part of the introduction to this concept from the book 'Perfect Practice Routines' from the Snooker Gym Training Guide Series. It explains the basic concept of this simple numbering method.

There are over one hundred and fifty practice routine diagrams in that book, and they are a great way to supplement the benefit you will get from other products from The Snooker Gym.

### **H**

H applies to the Height you will strike the cue ball and is the first value you work out when planning how to strike the cue ball for your desired position. There is a scale of 1-10 with maximum lowness on the cue ball being H1, perfect centre ball striking H5 and the highest part of the cue ball being H10.

An important point to know is that H1 means H1. Not H1.1 or H0.9 – being ruthlessly accurate with this is the only way to guarantee accurate feedback on the power of the screw shots you play. If the

only variable in a screw shot is the power you play, you will learn very fast. However, if you do not know for sure if you are hitting where you are aiming on the cue ball, your ability to equate how you play the shots to the results you get will be greatly diminished.

## **P**

P applies to the Power you will play the shot and is always the second value you work out for your desired strike. The 1-10 scale starts with the P1 trickle shot that would push the cue ball only six feet or so without striking any object ball. P5 represents half of the maximum power you feel you can play while maintaining a degree of control over the cue. In reality, though, even the top professionals reduce their accuracy when increasing power, which is why you very rarely see them doing so. P10 is the most power you can play whilst keeping your body more or less still!

## **L & R**

L & R applies to the amount of Left or Right hand side required for a shot. The ten point scale goes from L5 being the most amount of left hand side you can play without miscueing, to L1 being the tiniest amount of left hand side. R1 equates to the tiniest amount of right hand side and finally R5 is

the maximum right hand side you can play without miscueing.

A very important observation here is that R5 is less with H10 or H1 than it is with H5! The reason for this is that the cue ball is fatter at H5 than it is at H10 or H1. Therefore, the scale R1-5 means the range of minimum to maximum side spin available at any given cue ball height.

So for example, when you need to pot a straight black and screw back off the side cushion with a lot of side spin, you can apply more side spin by playing H2 than by playing H1. You will still get enough screw back to get where you want with the cue ball, but this option of ‘cheating’ extra side spin is very useful if you know when to use it.

## **Nic's Coaching, Learning and Practice Principles.**

### **Coaching Principles:**

#### **Nic's Question Reversal Principle.**

Reversing a client's question back to them:

Client: "Nic, do I move when I play this shot?"

Nic: "You tell me. When you play it, just notice what happens to the top of your head. Then tell me what happened."

This prevents the client relying totally on what you say and starts them relying on their own awareness. Remember, your ultimate target is to help a client empower themselves when you are not there to help them. Self awareness is one of the quickest ways you can help them achieve this.

This principle also helps the client to learn a way of thinking that helps them find their own solutions, rather than relying on outside sources.

Remember the old adage:

'Give someone a fish, feed them for day. Teach a person to fish, feed them for a lifetime.'

#### **Nic's Worst Case Scenario Principle.**

Can you handle it? The Worst Case Scenario, I mean?

If you cannot – get out of here ‘coz you ain’t gonna make it!

If you know how to deal with defeat, adversity, missing a ball, or losing a business deal then your mind will be clearer to focus on what you do actually want.

One of the greatest barriers to learning new ideas and techniques is a client being scared of the unknown failure that their attempts may bring.

A great way of being fixated on what you *don't* want, and therefore attracting it to yourself, is to be resistant to it. In resisting, you adopt the form of what you resist – much like a ball of clay being pushed against a solid patten, object or shape. This does not mean you have to love losing. What it does mean is that it will not hold you back if it happens, and that missing or losing can propel you forward with determination to more growth rather than slowing down your attitude and determination.

Most people are so scared of ‘failure’ they will avoid its existence and try to pretend they can live without it. Nic’s Worst Case Scenario Principle helps a person clarify what failure is to them, and bolsters their relationship to its inevitability.

Being able to treat errors with an occasional sense of humour is also a very effective way of dissolving resistance to the natural learning process that moves us from imperfection to something a bit closer to

perfect. We never actually reach perfect, though, as even a 147 break contains tiny errors in aiming or positional play. So the healthiest relationship we can have with errors is to realize we always make them, and simply resolve to make them smaller, less frequent or both!

Remember the Japanese saying:

“Fall off your horse seven times, get up eight times.”

### **Nic's Achievable Outcome Principle.**

It is better to attempt achievable outcomes, than unachievable ones! Your targets should still be ambitious, but you will be ahead of a lot of dreamers who set goals that are not possible to achieve.

These dreamers set ambitious targets just so they can feel good, without having a clue whether they are achievable. Then they wonder why they haven't achieved them. But this is not for you. You will achieve all your achievable targets!

Think about your favourite hero – Tiger Woods, Michael Schumacher, Bill Gates or Mother Theresa all had achievable outcomes otherwise they never would have achieved them.

Before you complete your achievable outcome, make sure you have another achievable one set to keep your momentum and sense of direction going.

## How to set an Achievable Outcome

**S**pecific:

Example: To be slim.

**M**easurable

Example: To weigh 65kg.

**A**chievable

Example: Yes – right now I weigh 75kg.

**R**ealistic

Example: 65kg is realistic, 35kg is not realistic!

**T**imed

Example of target put into words: “It is (day, date and month) and I weigh 65kg.”

Finally, you should also know the steps needed to get from where you are to where you want to be, how long they will take and what the first step is.

Then take this step right now, and keep on keeping on until you reach your target.



## **Learning Principles:**

### **Nic's Deliberate Failure Principle.**

‘What you resist, persists.’

This life wisdom may be well worn with the sandpaper of people's words, but it still remains true. There is another life wisdom that we can add on top of this:

‘The only way out, is through.’

But what does this mean in real terms?

It means if you are scared of missing, miss on purpose.

It means if you are scared of losing, lose on purpose (one frame in practice – preferably telling your opponent beforehand, NOT in a match!).

It means if you are scared of missing the red ball on a safety shot, miss it on purpose the next time you practice.

It means if you are scared of playing a bad positional shot, don't just play a bad one – play the worst one you can imagine!

If you are scared of asking someone on a date, deliberately ask five people who you think will definitely say no to you.

This does not mean you have to do this all the time. Rather it means take these scary shots into your practice and fail with wanton abandon for a few

minutes, and you will often find any resistance to the shot has completely disappeared.

Get the idea? If we can deliberately make the mistake at will, we often learn why we were making the mistake in the first place. It also causes us to realize we are the cause of the mistake in the first place. This is the most empowering place to be, and a sure route to being a solution finder rather than carrying the problem like a sack on your back.

### **Nic's Observe Predict Plan Principle.**

Here is a description of the three stages that make up this principle:

#### **Observe**

Play a shot and Observe the path the cue ball takes. Keep playing with different height and power, and Observe where the cue ball goes. If you have any targets for the cue ball at this stage, you are NOT in the Observe phase and therefore NOT following instructions. Targets are not allowed here!

#### **Predict**

Play the same shot again, and now that you have had a bit of experience with it, commit to playing it a certain way and Predict where you think it will go if you do so. Keep Predicting until your ability to tell the future is improved.

It is very important here to have the awareness of whether you are playing the shot as you intended or not. It would be vital to know that you struck H4 when in fact you were aiming H5. You will then have very accurate feedback between the result you have and how you played it, which is the gateway to improvement and crucial for the next step.

## **Plan**

In the final phase, you will use the experience you gained in the first two steps to Plan where you want the cue ball to finish and work out the way you think you need to play it to get this result. Keep refining the way you play the shot until you get the result you want

In order for you to get even more benefit out of these routines, you can read 'Improve Your Practice, Improve Your Game', as well as 'Positional Play Prowess' from The Snooker Gym Training Guide Series which both go into these concepts in more depth.

## **Nic's Closed Eye Principle.**

'Awareness, cures.'

'What you can measure, you can improve.'

Ne'er were truer words spoke. Our only route to awareness is through our senses. The best way to increase the awareness from one sense is to block

the awareness of another. In snooker the most relevant ones to block are vision or hearing.

This means either closing our eyes, or inserting ear plugs! This latter option is fantastically useful for improving feel for how you strike the ball.

Andrea Bocelli, Stevie Wonder and Ray Charles were all outstanding musical performers. And also totally blind. How is this so? If you have watched the film 'Ray' that describes Ray Charles' life, you will know how finely he had developed his sense of hearing. He was even able to hear a hummingbird outside the window of a noisy restaurant he was dining in.

Borrowing this sense refinement process from these outstanding individuals can help us to gain a greater awareness of how our body is playing a shot, than would ever have been possible. Balance, tension, comfort, small errors and unintentional adjustments to our position are all brought into touch more heavily if we simply close our eyes. Applying this to our practice and coaching sessions can improve our improvement rate dramatically!

No, you don't have to perform these all the time. Occasionally doing this for a few shots or a few minutes is usually more than enough, but feel free to do more if you still derive benefit from it.

## **Nic's Super Comfort Principle.**

Don't rely on textbooks too much. Even this one!

There is no one right way to play snooker because we are not all clones with identical bodies and preferences for how to play the game.

Think about it, even the world number one player would change their ideal technique, body position and balance if the table became a different height. So, we have to find a way to get to our own individualized perfect technique. This is because each one of us has a unique combination of body shape and proportion to fit to a snooker shot.

Let us assume that we want to work on the ideal forward and backward balance in our stance. There is no one right way to stand, so we have to discover it for ourself in our own internal 'comfort settings'.

By developing the ability to move our body into all the available balance positions open to us, we get very close to our ideal solution. In this example, we would get into the stance position and slide our balance forwards and backwards whilst keeping our feet in the same spot on the floor. In doing so, we must make sure that we go so far forwards and so far backwards that it is uncomfortable in each of those two extreme positions.

The reasons for this discomfort are firstly to give your body the benefit of experiencing both full extremes in the technical aspect you are working on.

From knowing both limits of what is possible you therefore know everything that is possible within these limits, and you are in the best position to work out beyond any doubt the ideal position for you.

Secondly, it teaches flexibility of approach. If your mind is open enough to try something that feels totally alien, you are much more likely to experiment in the future and give yourself more choices in how you apply yourself to your game.

The error many players make is to be scared of trying something out for a few minutes because they feel they will somehow lose their previous way of playing. If their previous way of playing really was the best way without any doubt, it would be easy to go back to. Within reason, if nothing is ventured nothing is gained.

We should also remember that familiarity does NOT equal comfort. Everyone is familiar with everything they do, but how do they truly know they are comfortable? The best way to confirm this beyond reasonable doubt is by applying Nic's Super Comfort Principle.

The last phase of the process is to then slide back and forth to both extremes until you get to the ideal position for you. Going through the full range to both extremes about six times is usually enough for your body to tell you what position is right for you.

When you have settled on the ideal, have a good look at that position to imprint it into your mind for future reference. Then apply your brand new perfect technique into your game.

### **Nic's Awareness Feedback Principle.**

‘What you are not aware of, you cannot control.’

With more awareness of what is going on when you play a shot, both your conscious mind and your unconscious mind (the mind that keeps your body running when you are asleep) have more chance of knowing what to do to improve your game even further.

For example, I may ask a client if their cue is going through straight or not. On the first few occasions I ask, they may have no clue as to the answer. But as I keep asking, the answer will become clear. As the awareness of exactly what the cue is doing increases, so the cue itself will usually start straightening itself out as if by magic.

Persisting with the same question will keep drilling down to deeper and deeper levels of awareness... and usually straighter and straighter levels of cueing. This method can be applied to many aspects, and your Snooker Gym Instructor can help you identify which parts of your game will grow by using this approach.

## **Nic's Shot Scanning Principle.**

This method can be applied to shot selection, positional play and even for learning options open to you when playing the cue ball from the cushion.

This principle will eventually allow you to have INSTANT recognition of the right shot to play. By applying this extremely simple technique, we are training our mind to become attuned to every option it is faced with in such a way that it can provide us this answer in any full pressure match situation

It involves systematically scanning through every choice available to you, so that you may then choose the best one. Many good openings are missed simply because a player failed to see it.

I am reminded of the chess playing programme 'Deep Blue', that was eventually able to beat world chess champion Gary Kasparov. It did so by employing Nic's Shot Scanning Principle! Simply by calculating every single option available to it and every single response possible by Kasparov, and every single possible response to those responses etc etc, the programme was able to out calculate its mighty opponent.

Snooker is a bit simpler to tame though. For shot selection, you would start like a radar from the left hand side of the table. Slowly move your radar



across toward the right hand side of the table. Every time the 'radar line' touches a ball, estimate the direction the cue ball and object ball would travel with fine cut, quarter ball, half ball, three quarter ball contacts on the left hand side of the object ball and vice versa on the right hand side of the object ball.

This will give you total awareness of all the options you have with this object ball for both safety and potting. Continue the radar scan across to the right hand side of the table, stopping at each object ball to scan your options. Stop when you have completed the process on the last ball available.

You can apply Nic's Shot Scanning Principle to safety, positional play, choosing which ball to pot, and how to play the cue ball from the cushion. All these techniques are covered in selected discs of The Snooker Gym DVD Series.

The real beauty of this principle is that it only takes a few minutes a day. After only a week of applying it at this rate, you should notice big improvements in your ability to analyse shots correctly.

### **Nic's Improvement Isolation Principle.**

Simply put, this involves stripping out the variables from what you are doing. This is to that

you have just one aspect of your game to work on at a time.

Think about it, it would be easier to learn to count if you did not have to learn to read at exactly the same time. So make up your mind to do one, or the other. The same applies to snooker. A lot of players are far too ambitious in improving their technique and their game in solo practice. They simply try to do too much.

I am reminded of a friend of mine who is the cousin of squash legend Jahengir Khan. My friend asked for coaching from his famous uncle, who promptly told him to go and walk in the sea.

Not to get lost, but to practice. The assignment he was given was to hold a table tennis bat in his hand and perform the squash serving action with the bat moving all the way through the water. He was to do this every day until his arms were so sore he could not move them any more.

This went on for about a month until my friend was told that he had now qualified to start practicing the second part of the serving action! At this rate he would have mastered the five aspects of serving in five months, with one month to put them all together.

This is compared to most players who would try to learn all five variables at the same time. They would then have been playing catch up for the rest

of their lives, and wondering why they never got close to mastering any serving action.

The secret here, then, is to build your wall one brick at a time. This will ensure you pay attention each step of the way, enjoy the process and end up with a very solid defence against any type of snooker onslaught.

## **Practice Principles:**

### **Nic's Improvement Zone Principle.**

Too easy is boring, too difficult is over whelming.

Nic's Improvement Zone Principle is your route to continuously staying within these two boundaries. You will then be able to improve at what you do for as long as you want to, whether that be in snooker, any other sport, or life.

The most ambitious learners in the world usually do NOT improve the most. This is because they can often go from ambition into frustration. The ones who grow fastest are those learners who accept they have limitations. They take the trouble to learn where those limitations of improvement are, and reign themselves in just enough that they get out of overwhelm and *down* into the 'Improvement Zone'.

Similarly, the unsuccessful person will only do what feels good in the moment, and not do what is necessary for the future. These type of activities are usually enjoyable, not particularly productive and do not give longer lasting improvement or even happiness. The difficulty of these tasks needs to be ramped up a bit to lift oneself *up* into the 'Improvement Zone'.

To both be happy in life and improve properly in what we do, we must know that we are doing the

right thing, to the appropriate level of difficulty, whether we want to or not. This is the key to consistent happiness and improvement in life and in sport.

‘Do what you know you must do, when you know you must do it, whether you like it or not.’

Brian Tracy.

In simple terms for snooker, this means playing practice routines that you can complete between six and eight times out of ten. If you are not making the routine six times out of ten or more, it is too difficult for you and you are probably beyond your depth. Make the practice a bit easier until you get to six out of ten or more. At this level you will be able to learn more, and solidify the part of your game you are working on. Any less than the magical figure of six and it will be like trying to build a tower with wet cement.

If you are consistently making the shot more frequently than eight out of ten, you again are probably not learning much or solidifying a useful part of your game. In this case make the practice a bit more difficult so that you get back into the ‘Improvement Zone’. If you are a top professional who pots long balls nine out of ten all the time, then make the positional aspect of the shot a bit more

difficult. This way, even if you pot nine out of ten, it would still be possible to succeed only five out of ten for the routine if your position was not up to scratch.

### **Nic's Practice Persistence Principle.**

This means keeping on keeping going until you get what you want. I remember Chris Serle presenting a TV show in the 1980's where he was learning to play snooker from Steve Davis OBE, later to become a six time world professional champion.

One of the techniques Steve encouraged Chris to employ was to restrict himself from eating until he had completed his set of practices for the morning. Steve did this for himself many times when he wanted to improve his game, obviously to great effect.

You can set your achievement limit with a choice of four parameters:

- 1. Time:** Persist with your routine until you have done nothing else for your given amount of time. You should be dog tired by the time you finish!
- 2. Total number of repetitions:** I worked with a player once who set a target to practice one thousand long pots in one week. We did one

hundred and fifty per day for seven days. The target was just to play that many and learn what we could from it. Whether we potted any or not did not matter

**3. Percentage of repetitions successful:** Play until you reach a set target out of say ten or twenty attempts. Even if you miss the first five, you must carry on until you play your set of ten or twenty. Otherwise you just breed mental laziness in yourself.

**4. Number of repetitions successful:** This method is great when you are playing games. When a friend of mine had notched up a few century breaks, he used to stay practicing with people until he had made a century – even if he had to stay in the club for ten hours! While I admit this could have been an easy way to a bad habit of playing too open a game of snooker, it was the mental discipline to follow through that was important in this instance.

### **Nic's Restricted Repetition Principle.**

This simply means play a *maximum* number of repetitions of your practice, and no more than that. This is the opposite to how most of us approach practice, which is to feel we are heroic if we practice for hours on end.

It is possible to improve your game in a few minutes, or even within a few shots, with focused routines and attention. This is what Nic's Restricted Practice Principle strives to achieve. Much like savouring every mouthful of a meal, practicing a maximum number of shots will force you to give 100% attention to everything you are doing... 'just in case I miss something that happened.'

An example of this would be to allow yourself a maximum of only ten or twenty of the shot you are working on. You will almost certainly encounter a lot of internal resistance to STOP at the prescribed number of shots. Whether it is going well or badly, we will all have our reasons for wanting to continue. To make use of this principle, these reasons must be completely ignored!

My challenge to you is to see if you can do this every day for a week without improving that part of your game – you may find it impossible not to improve!



## **Nic's Observe Predict Plan Principle in depth:** **Why, how and where it can** **totally transform your game.**

### **What is an 'OPP' practice session?:**

An 'OPP' coaching session simply taps into the natural human way of learning that all toddlers used when learning to walk. I doubt many adults, if they had forgotten how to walk, could learn as quickly as babies do.

This is because the analytical adult mind would get in the way, and some would certainly give up. But this mental interference is exactly what is removed during an 'OPP' session.

The very simple three steps that go to make up an 'OPP' session can benefit any player from beginner to top professional in any area of the game chosen from the list below.

## **Tips for designing and delivering an ‘OPP’ practice session:**

Nic’s Observe Predict Plan Principle cannot work without using Nic’s Improvement Isolation Principle. Do not mix more than one of the variables in the list below into an ‘OPP’ coaching session because it will make learning almost impossible for the client and reduce their enjoyment accordingly.

Tell the client the three steps that you will take them through and approximately how long it will take. It is recommended to spend no less than three minutes and no longer than thirty minutes on any ‘OPP’ coaching session.

You could also tell the player to play a certain number of shots at each stage, for example ten shots. This may help them focus a bit more on what they are doing and ensure they follow your instructions exactly on every shot.

It is very important to make a small mark of chalk on the cloth to ensure that the cue ball (and object ball if you are using one) start in exactly the same position for every shot. Without this accurate repetition, an ‘OPP’ coaching session will be useless because

accurate and inconsistent feedback on the shot would not be possible.

Where appropriate and important, underneath certain practice sessions I have given guidance notes for the Observe, Predict or Plan stages, as well as General notes. These points have come from years applying these principles to the various areas of the game listed, so please take notice of them before you start the practices.

Spend roughly 30% of the session on the Observe stage.

Spend roughly 50% of the session on the Predict stage.

Spend roughly 20% of the session on the Plan stage.

## **Coaching protocols for the three stages:**

### **Observe (or ‘Target Not Allowed!’):**

The client is not allowed to have a target.

For example, if the player were playing the cue ball up and down the table with no object ball to learn the speed of the cue ball, there would be no target for the speed of the cue ball. The player would just strike the cue ball at the speed they felt like and Observe where the cue ball finished.

For example, if the player were playing an easy pot and wanted to learn about cue ball position after the pot, there would be no target for the cue ball destination after the shot. The player would just strike the cue ball at the height and speed they felt like and Observe where the cue ball finished.

For example, if the player were playing to learn potting angles, there would be no target for the object ball when going down to the shot. The player would just get down to the shot and deliver the cue as straight as possible on the line they get down to.

It would almost be like they were getting down to the shot with their eyes closed, then opening them to see what object ball aiming line they had fallen into. Or it would be as if they were getting down to the shot without an object ball on the table... only when down on the shot would the coach put the object ball somewhere within the aiming line of the cue ball. The player would then just deliver the cue as straight as possible and Observe where the object ball went.

No corrections are needed for the player after they get down to the shot. If the player starts to correct their aiming or position on the shot it implies that they have a target they are trying to reach. A target is not allowed at the Observe stage though!

The coach is not allowed to tell the client what to do – the client must simply enjoy experimenting with his choice of playing the whole range of different options open to them on the situation you have selected for them.

Do not proceed to the Predict stage until the client has developed the flexibility to play the full range of shots open to them. For example, having played the full range of different powers, heights on the cue ball or aiming angles on the shot in concern.

Do not proceed to the Predict stage until the client has developed the ability to play this full range shots with no target, no plan and no goal for the shot. Keep asking the client to check if they have a target and are therefore 'cheating'!

As sports people are programmed to have targets, it may be very unsettling for a player to play a shot with absolutely no target at all. They may often object strongly to the pointlessness of this practice but you have to drag them, even if kicking and screaming, all the way through the three stages and they will be guaranteed to improve their game by the end of the process.

To make absolutely sure you have accurate observation that the player is NOT playing with any target, you can use a TRICK QUESTION:

After the shot where you would like to confirm the player's lack of target, simply ask with complete confidence that they will answer:

"On the shot you just played, what was your target for the cue ball direction / cue ball speed / object ball direction / object ball speed?"

Their answer SHOULD BE:

"I did not have any target because I am not allowed to have one!"

However, their answer will OFTEN BE:

"I wanted the cue ball / object ball to finish....."

To which you would respond with half a smile and a twinkle in your eye:

"Why?! I thought you are NOT ALLOWED to have a target at the Observe stage?!"

To which they will smile and say:

"Aaaaaahhh! Sorry! I forgot – let me play the shot again!..."

This is a great way to build humour into your session, and let the player feel they have permission to fail. These are both vital ingredients for a player's growth.

When a player successfully completes the Observe stage, they may be completely astounded at the extra feeling and awareness they have for what is going on in their body, and on the shot. It will often be the first time the player has ever known this level of awareness. This is generally a very enjoyable experience, and it is appropriate to allow them to continue this until they are satisfied they want to go to the Predict stage. Remember: what you are not aware of, you cannot control, improve or enjoy.

You will occasionally see an apparent contradiction in the guidance notes on the Observe stage of some of

the practices. I suggest that you make sure the player plays certain ball contacts and ball destinations in the Observe stage. This is just a general guide for the client and not an explicit instruction.

The reasons for these near instructions are to allow a player to learn the full geographical knowledge of the table and of the shots they are playing. These reasons are explained in detail when appropriate.



## **Predict (or ‘Guesswork!’):**

The client is still not allowed to have an end target, but must intend to play the shot in a given way.

Before every shot played, the player must Predict the end result of the shot if they were to play the way they intended.

For example, if the player chooses to play 80% power on a certain shot, they should Predict before playing the shot where the cue ball will finish if played with this power.

For example, if the player chooses to play a certain height on the cue ball, they should Predict before playing the shot where the cue ball will finish if played with this height.

For example, if the player got down to a pot and saw the aiming line they were on relative to the object ball, they should Predict before playing the shot where the object ball will go if they deliver the cue in a straight line.

After every shot, ask the player if they played the shot with the cue power, cue ball height or straight

cueing they intended to. Only then will they be able to know if their prediction for the shot was right or wrong. If the player did not strike the cue ball as intended, they will have to play the shot again until they do so. With this valuable feedback, the client will then have a better idea of how to Predict the result of the shot next time they play it.

Keep asking the client to check if they are ‘cheating’ by trying to Plan the shot!

Even if they tell you that they have no target for the shot they are playing, by all means trust what they tell you but also verify it very carefully. Often, a player will be so deeply in the habit of playing for a set target that they will do this without even realizing it.

It is your job to watch their body language and cueing actions before, during and after the shot. This is so that you can determine if indeed they are playing the shot non-judgmentally as they must do at the Predict stage, or ‘cheating’ and jumping to the Plan stage.

You will usually be able to know this if the player is cheating by checking if the player’s head or cue is jerking after playing the shot, or in some way ‘fishing’ or ‘chasing’ for the cue ball or object ball after the

shot. This would be in a last ditch attempt to control the direction of the ball that their unconscious mind knows was played wrong, before the conscious mind sees that it was not played right.

Another giveaway sign that the player has an unauthorised target in their mind for the shot is if their eyes seem glazed and transfixed on the balls after the shot is played. They should by all means watch the balls for feedback, but if you feel they are obsessively willing the balls into position after the shot, you know that they must have broken the rules by having a target before playing the shot.

If you suspect this to be the case, please ask the player whether it is true. Watch their eyes when they give you the answer.

This will tell you if they are trying to hide something OR if they did not really understand the question you just asked.

Both of the above scenarios would more than likely mean that the player did not understand the instructions you gave at the beginning for this stage. This will happen more often than you think, no matter how brilliantly and simply you feel you explained it.

Remember that the definition of communication is the response you get, so take it upon yourself to give the instructions perfectly first time if you can. The first few times you explain these stages to a player, you can try asking them to explain it straight back to you. This will show you for sure whether you got your point across.

If your player has trouble following these instructions, you can use a coaching Plan B:

1. Tell the player to get down to the shot you are working on, of course with no target for the end result other than playing the cue power, cue ball height or straight cueing they intend.

2. Lay your own cue on the table in front of the cue ball so the player cannot play the shot.

3. When the player has finished their cueing and has paused the cue at the cue ball to confirm they are about to play the shot with the cue power, cue ball height or straight cueing they intend... ask them to Predict what the end result of the shot will be.

You can ask them to do this verbally out loud (although even speaking quietly may cause body movement that could cause the shot to be played

differently to the cue power, cue ball height or straight cueing they intend).

Or you can ask them to make the prediction in their own mind.

4. Only when you feel they have committed to play the shot with the cue power, cue ball height or straight cueing they intend can you remove your cue from the table and let them play the shot.

**\*\*Optional:** As you are removing your cue, it can help the client do what they intend if you remind them of the cue power, cue ball height or straight cueing they intend to bring to the shot.

Remember, we WANT the player's Prediction to be proved wrong so that we can improve it next time around until we get to improvement.

The player will often NOT want their Prediction to be proved wrong so that their ego and pride can be protected. In this case, the player would often adjust their intended way of playing as they go through the shot in a desperate attempt to 'get the shot right'.

This always results long term in less learning, improvement, professionalism and satisfaction for the player.

5. Ask the player if the shot was played with the cue power, cue ball height or straight cueing they

intended. This is THE MOST IMPORTANT PART of the Predict stage.

6. If the player DID NOT play with the cue power, cue ball height or straight cueing they intended then the result of the shot IS NOT valid and they have to play the shot again.

7. If the player DID play with the cue power, cue ball height or straight cueing they intended then the result of the shot IS valid and you should ask them:

"Was your Prediction for how you thought the shot would finish accurate or not?"

If the player says: "Yes", then great. Play the next shot and see if they can again Predict as accurately as the previous shot.

If the player says: "No", then also great. Play the next shot and see if they can Predict a little bit more accurately than the previous shot.

8. When the player is completely comfortable Predicting the result of the shot before you remove your cue from the table, and then delivering with the cue power, cue ball height or straight cueing intended... you no longer need steps 1-4 of Plan B.

Well done!

Do not proceed to the Plan stage until you have seen an Improvement in the client's ability both to play the shot as they intend, *and* their ability to Predict the result of the shot. Both these parts of playing the shot will usually improve at the same time. Without this improvement, the client will get no benefit at all from the Plan stage.

## **Plan (or ‘Target Compulsory’):**

The client must always have a target as if they were playing the shot in a match. In fact, the more match like and serious their approach to the shots in the Plan stage, the more they will be able to judge and feel how much the ‘OPP’ session has improved their game in real match play.

The player is not allowed to think in the same way as they did in the Observe or Predict stages as they are specific exercises designed to accelerate their natural way of human learning. However, the player will of course use what they learnt in the first two stages to help them Plan all their shots with better judgement and more accuracy.

Do not finish the ‘OPP’ session until the client feels they have improved their ability to play the shot. If necessary go back to the Predict stage, or even the Observe stage before completing the client’s improvement in this Plan stage.



## **The areas of a player's game that can be transformed using an 'OPP' session:**

### **Aiming, Power & Positional Play.**

These are the three major components in sport that can be refined and improved using an 'OPP' coaching session. These are then broken down into the following sections and sessions.

### **Section 1: Aiming the cue ball.**

#### **Aiming the cue ball on its own.**

##### **Observe:**

Place the cue ball on the brown spot and make a thin chalk mark that the player can easily see, directly behind the black spot on the face of the top cushion. Have the player aim roughly toward this mark and Observe where different aimings send the cue ball.

Do NOT do what some players do, which is to place an object ball on top of the cushion to aim at. This is because a chalk mark is a smaller target and it is easier to see if the cue ball hit the chalk, rather than trying to work out if the cue ball was directly in line with an object ball above the cue ball contact point on the cushion.

##### **Plan:**

Do not complete the session until the player is able to consistently strike the exact centre of the chalk

mark in the top cushion. Because the contact time between the cue ball and cushion is so short, it may take a while for the player to be able to tell with great accuracy whether the cue ball hit the mark exactly or not. Do not let the player get away with even very small mistakes at this stage. Even if they get confused, annoyed or plain don't believe you when you tell them the cue ball did NOT hit the chalk exactly, stick to your guns and don't let them escape the practice until they can tell you precisely whether the cue ball hit the chalk mark or not.

Be aware that this aiming exercise may only take a few minutes, or may take one session per day for as long as up to a week for the player to re-align their aiming in an easy and natural way so that they are aiming where they are looking. This may be the first time in their life they have done this accurately, and as such the resulting change in aiming may take a while to import into their game when potting. This is because the player will, because of their previously imperfect sighting, have been compensating their aiming on pots. So their eyes will still be used to aiming wrong when in fact the cue is now aiming correctly. This will have the effect of making the player miss the balls perhaps more than when their aiming was wrong!

I went through the same process with my long game a few years after I had made my first 147 maximum

break. From the time I was able to aim correctly and hit where I was aiming at the chalk mark in the top cushion after having gone through the 'OPP' process for a few days, it took me about seven to ten days to import this new and improved perfect aiming into all of my long, medium and short game. I was playing four hours a day with an 'OPP' aiming session for ten minutes every morning.

At the end of this total process that lasted about two weeks, my whole game had improved about 20% and my confidence skyrocketed. I was now able to look where I was aiming, with no aiming compensation, and know that where I aiming was where I was looking. My eyes just showed me the way to pot the balls, and I found the game so much more enjoyable in every way after that.

### **Aiming at the centre of the cue ball.**

#### **Observe:**

With the same set up as in the previous exercise, it is now assumed the player can hit the chalk mark in the middle of the top cushion exactly and consistently.

The task now is to put a ball on the baulk line about three inches to the right of the cue ball, and another about three inches to the right of the cue ball. Play each shot with the cue ball speed such that it will stop near the baulk cushion. The objective is to play

different amounts of side on the cue ball and Observe where the cue ball comes back on the baulk line.

Do not proceed to the Predict stage until enough side has been played on the cue ball to come wider than the yellow spot, and on the other side of the table wide of the green spot. This shows the player has the flexibility to play with both extremes of right and left hand side.

Also ensure the player plays with ‘micro side’ on at least a few occasions to see and feel what it is like to bring the cue ball just centimetres left or right of the cue ball starting position.

### **Predict:**

Here, watch out for the table not running in a perfectly straight line, especially when the cue ball comes over the slight cloth depressions that have taken the place of spots on an old cloth. It is important if the player can see whether the table is affecting the results of the shot, or if it is just their own cueing. If the spots are disturbing the path of the cue ball, one can place the cue ball slightly to one side of the brown spot, move the chalk mark in the top cushion the same amount and continue the practice, again with two object balls three inches to either side of the cue ball.

If the table is still drifting the cue ball to one side of the table because the table is off straight, then the player can have fun learning the skill of adapting their

aiming to imperfect conditions. We all know how much snooker players love to do that!

**Plan:**

Do not end the session until the player is easily able to hit the chalk mark in the top cushion and strike the correct amount of side spin to contact the balls both three inches left and right of the cue ball starting position. When they are able to do this, it will be very easy for the player to see where to play the cue ball with 'no side spin', in other words centre ball.

The beauty of this process is that it will help the player learn to see the centre of the cue ball without making a common mistake. This error in advice sees the player finding out whether they naturally aim with left or right hand side and then deliberately aiming the same amount with the opposing side. The theory here is that if they know their unintentional mistake, and make exactly the same mistake intentionally but with the opposite side, that they will be hitting centre cue ball all the time.

In school, we were told that two wrongs don't make a right and the same applies here. Nothing is more confusing for a player than to do this 'double error' routine on every shot they play and it rarely works elegantly, enjoyably and efficiently for the player in getting them to the same place they will be after a few quick 'OPP' sessions.

Remember to K.I.S.S. : Keep It Simple, Stupid!

## **Section 2: Aiming the second ball.**

### **Aiming a pot.**

#### **Observe:**

Tell the player they are not allowed to aim for the pocket, but only to aim in the general area of the pocket. When they get down to the shot, they must simply deliver their cue in a straight line where they are aiming the cue, wherever that may be, and simply Observe where the object ball goes.

#### **Predict:**

Tell the client to get down on the shot in the same way as in the Observe stage.

After they are settled into the shot, they should mentally Predict the point on the cushion, or the point in the pocket, where the object ball will go if they deliver the cue on the line of aim they have got down to. The client does not have to say this target out loud or point to the target as this will disturb their body position, and thus their aiming.

#### **Plan:**

Using what they learnt in the first two stages, the client may now Plan to pot the object ball.

### **Aiming a safety shot - cue ball direction.**

#### **Observe:**

Set up a safety shot angle that the client can repeat, for example for ten shots. Usually, placing a red near the black spot, and the cue ball in the 'D' will work very well. The player must play the same side of the object ball every time.

It will not usually be helpful to place the red very near a cushion if practicing this shot as a length of the table safety. This is because the reactions of the cue ball and object ball are distorted when the object ball is very close to the cushion. This distortion will reduce the feedback the player will get that is relevant to most 'back-to-baulk' safety shots, where the object ball is at least twelve inches away from the top cushion.

Be sure to have the player play the red thick enough on a few occasions such that the red bounces off the top cushion and comes up the table at the same speed as the cue ball.

Side spin is not allowed at any stage. This is because side spin just introduces another variable into the equation. Also, without side spin, the player will have to learn the natural path of the cue ball as well as what angles from the object ball it is impossible to send the cue ball (without the angles being exaggerated with side spin on the cue ball). Knowing very accurately what is impossible will of course help any player have a completely accurate idea of what is possible on the table.

Make sure to ask the player to play the cue ball just somewhere outside the red, so as to miss it, on at least a few occasions. This observation of what it looks like to miss the object ball by different amounts will be very important to a player's ability to learn to hit the fine edge of the object ball when they need to. It also breaks a player's fear of missing the red, and will help them to know what it looks like to miss the red when they are in a match.

This way, if the player aims to miss the red by mistake, it will appear obvious to them and they can either adjust their aiming or stand up again and get into the shot on the correct line of aim.

### **Predict:**

Here, the speed of the cue ball is irrelevant. The player is only to predict the direction of the cue ball, and is not permitted to attempt to control the speed of the cue ball.

Ninety per cent of good safety play is found in making the right contact on the object ball. If this contact is not the angle intended, it will be impossible to judge the speed of the shot anyway. This is because, for a given initial speed of cue ball, the cue ball will travel faster off the object ball with a thinner contact on the object ball.

You will also find that when the cue ball is being played on the correct line consistently, that the player will naturally be a very good judge of cue ball speed.



This natural control of cue ball speed may well occur during the Predict stage.

**Plan:**

The player may now aim to send the cue ball onto the baulk colours, or between the baulk colours as they wish. The coach may guide the player until they have successfully played the cue ball into, for example, all three baulk colours.

After they have done this, the player will have lost the fear of hitting the baulk colours by mistake, and will be even more confident of finding the gaps between the baulk colours when they are in match situations.

**Aiming a safety shot - object ball direction.**

**Observe:**

It will not usually be helpful to place the red very near a cushion if practicing this shot as a length of the table safety. This is because the reactions of the cue ball and object ball are distorted when the object ball is very close to the cushion. This distortion will reduce the feedback the player will get that is relevant to most 'back-to-baulk' safety shots, where the object ball is at least twelve inches away from the top cushion.

Be sure to have the player play the red thick enough on a few occasions such that the red bounces off the top cushion and comes up the table at the same speed as the cue ball.

## **Section 3: Cue ball behaviour.**

### **Cue ball speed on its own – EG up and down the length of the table.**

#### **Observe:**

Place the cue ball on the baulk line. Do NOT place the cue ball on the brown spot, and do NOT let the player aim to hit the cue ball up and down the table in a perfectly straight line.

We are NOT interested in a player's ability to hit centre of the cue ball as that will come on another practice, and if they try to introduce it in this practice against your instruction, they will confuse themselves and be diverted from the real purpose of the exercise – cue ball speed control only.

Keep the speed of the cue ball to within two lengths of the table. You can repeat the 'OPP' sessions with the cue ball speed more than two lengths of the table to provide variation, but you will find that a player benefits much more from developing control over soft shots first... their power shots then automatically improve.

Mastering power, however, does NOT lead to mastery on the soft shots. This is partly because the slower you do something, the easier it is to know what is going on with every aspect of the shot. Slowing things down therefore makes it easier to get

something perfect, and this perfection on slow shots will teach the player the necessary strike 'timing' to control the cue ball as if it were on a piece of string. It is this 'timing' that will help a player on long shots and power shots.

**Plan:**

Ask the player to successfully Plan to send the cue ball into the top cushion and land within a balls width of the baulk cushion at least once and then to within one balls width of level with the brown, blue and pink spots at least once.

**Cue ball direction on its own –**  
**EG escaping from snookers.**

**Observe:**

Select a snooker escape that the player finds difficult. The snooker escape they choose should be a one cushion escape.

The player should play each shot just above centre on the cue ball, with no side spin and with no more power than is required to gently reach the object ball.

**Predict:**

Learning this step is very useful for match play. A very powerful technique for escaping from snookers in a match is for the player to select an aiming line for the snooker escape and Predict where the cue ball will go.

The player should then repeat the Predict stage in their mind at least two more times until they feel they can predict the line of aiming required to send the cue ball to the right of the object ball and also to the left of the object ball.

This process will give the player a very clear idea of exactly where the cue ball will go after it leaves the cushion, and thus how to escape from the snooker successfully, striking with no side spin.

**Plan:**

See notes on the Predict stage.

**Cue ball side spin on its own – swerve shots.**

**Changing angle of cue to bed of table.**

**(Amount of Side Spin, cue ball Height and cue ball Speed remain the same).**

**General:**

Play maximum side spin on every shot.

Play the cue ball from the baulk end of the table toward the black end of the table.

Ensure the cue ball speed is between one and two lengths of the table.

**Cue ball side spin on its own – swerve shots.**

**Changing amount of Side Spin.**

**(Angle of cue to bed of table, cue ball Height and cue ball Speed remain the same).**

**General:**

Play maximum side spin on every shot.  
Play the cue ball from the baulk end of the table toward the black end of the table.  
Ensure the cue ball speed is between one and two lengths of the table.

**Cue ball side spin on its own – swerve shots.**

**Changing cue ball Height.**

**(Angle of cue to bed of table, Side Spin, and cue ball Speed remain the same).**

**General:**

Play maximum side spin on every shot.  
Play the cue ball from the baulk end of the table toward the black end of the table.  
Ensure the cue ball speed is between one and two lengths of the table.

**Cue ball side spin on its own – swerve shots.**

**Changing cue ball Speed.**

**(Angle of cue to bed of table, Side Spin, and cue ball Height remain the same).**

**General:**

Play maximum side spin on every shot.  
Play the cue ball from the baulk end of the table toward the black end of the table.  
Ensure the cue ball speed is between one and two lengths of the table.

## Cue ball side spin on its own – swerve shots.

### Changing cue ball direction to nap of cloth.

#### **General:**

Play the cue ball from the *black* end of the table toward the *baulk* end of the table.

Play with the angle of cueing such that the cue is just a few inches above the cushion, with central height striking on the cue ball.

Play the shot with different amounts of side spin.

Play with the necessary power for the cue ball to finish in the baulk area.

This session reveals how playing side into the rough direction of the cloth ('against the nap' of the cloth) gives the opposite drifting effect on the cue ball that a player may expect.

Keep playing with more and more amounts of side spin until the player miscues the shot at least once. The player will then have learnt the limit of maximum possible side spin on the cue ball. If then playing the cue ball the smallest margin just inside this limit, the player will see this reverse nap effect as clearly as possible.

## **Section 4: Aiming with side spin.**

### **Side spin aiming on a pot. Same Distance, Different Powers.**

#### **General:**

Here, it is usually sufficient to play a straight blue off the spot into the middle pocket to get the improvement the player needs. Every shot played on all of these stages must be with maximum side spin. If the player is not comfortable playing with maximum side, force them to keep playing the cue ball on its own with increasing amounts of side until they miscue the shot. This will teach them the maximum amount of side possible very quickly and help them to be confident when playing at the extreme edge of the cue ball.

Any shot played during these side spin sessions does not count if the cue ball was not played with maximum side. The player will often tend to play less side than maximum to 'make the pot easier'. But their task is to make the shot as difficult as possible by playing as much side spin as possible!

The player may need to break this session down into four separate OPP sessions. In each stage, the player should play the cue ball at the full range of powers between as slow as possible and also up to as much

power that can be played accurately – usually about 80% of their maximum power.

First, play the straight blue into the middle pocket and go through the OPP stages.

Second, repeat the OPP stages to just off straight on one side of the blue and all the way to a half ball potting contact (this is a potting angle of thirty degrees away from a full ball shot).

Third, repeat the second step but with the cue ball to the right of straight on the blue.

Fourthly, and after the player can handle the blues in the middle pocket, a shot that works well is to set up a middle distance pot with the cue ball somewhere near the blue area of the table. Then put an object ball about six inches away from a top pocket, on a three quarter ball potting angle such that the cue ball will touch the top cushion after potting the red.

Make sure at the fourth stage that the player plays at the full range of powers on this shot because it is absolutely vital that the player is able to compensate their aiming when the cue ball swerves before contacting the object ball (when playing the shot slowly), and also when the cue ball has no time to swerve before the object ball (when playing the shot with much more power).

If the player does not integrate this shot into their before the OPP session finishes, the session will be



virtually useless in getting them to a complete understanding of sidespin.

### **Side spin aiming on a pot. Same Power, different Distances.**

#### **General:**

It is recommended to break this area down into three separate 'OPP' sessions.

Play the red near the corner pocket from the previous exercise and choose three powers that you can go through the 'OPP' stages with.

With the first 'OPP' session, play 10% power.

With the second 'OPP' session, play 40% power.

With the third and final 'OPP' session, play 80% power.

This will usually be more than enough for the player to be totally confident with side spin on any pot they will ever be faces with, by the end of these three 'OPP' sessions.

### **Side spin aiming on a safety shot.**

#### **General:**

Choose the break off shot. Make sure the cue ball is played from the same position between brown and yellow on every shot, or between brown and green if they choose this side of the brown.

Maximum running side to be played on every shot. This does not mean that the player has to play

maximum side on every break off shot in a match. Rather, it means that if they can learn the shot with maximum side spin, they will find every other variation much easier. This is like someone taking their driving test with a manual car even if they are only going to use an automatic car after the test.

Aim for the end red of the pack on all shots. When the player can master this, they are then allowed to aim for the second from end red in the pack. Most professionals on television aim for the end red of the pack because it is easier to control the destination and speed of the cue ball, enough reds open anyway to make it an attacking safety shot and there is less chance of reds going near to corner pockets after the break off shot.

Play all shots at the same speed – the speed required to land touching the baulk cushion assuming the correct contact was made on the object ball.

### **Observe:**

Make sure, with different red ball contacts, that the player watches where the end red of the pack lands relative to the blue area of the table. This will help in being able to control the exact destination of the object ball after the break off shot.

This in turn gives an ability to never play a break off shot where the end red of the pack bounces off the top cushion and comes past the blue line of the table, leaving the opponent a pot into the middle pocket

even if the cue ball is tightly tucked under the baulk cushion.

### **Predict:**

Make sure the player experiments wantonly enough with their aiming that they have been able to play to miss the end red of the pack, and also that they play thick enough that the cue ball hits the second red in the pack.

### **Plan:**

When the player has mastered contacting the object ball at the correct angle, the player should experiment with placing the ball different distances away from the brown to learn how this placement changes the final destination of the cue ball along the baulk cushion for a certain object ball contact.

How new the balls, bed cloth and cushion cloth are on the table will govern exactly how much side spin is required on the cue ball to enable it to land on the baulk cushion directly behind the green spot (assuming the cue ball is played from the yellow side of brown). If the cue ball is closer to the 'green pocket' than this, it usually results in giving away a potting chance or at least a fairly basic safety for the cue ball to get back to baulk.

The newer (and therefore more slippery) these parts of the table are, the more side spin is required to counter the sliding effect the cue ball will have off the

three cushions it must contact in its figure of eight path from the end red of the pack and back to baulk.

The older and more dirty these parts of the table are, the more the cue ball side spin will be able to grip the cushions and change the direction of the cue ball. This means less side spin is required to get the cue ball to its ideal destination on the baulk cushion.

## **Section 5: Cue ball behaviour from a cushion.**

### **Reaction of cue ball into cushion.**

### **Changing cue ball Power (cue ball Height and Side Spin remain the same).**

#### **General:**

Select a shot that places the cue ball about one metre away from the cushion and that is being played into the cushion at between a thirty degree to forty five degree angle to the cushion. Use this same shot for all three of the OPP sessions for 'Reaction of cue ball into cushion'.

In this session, it is very important to ensure that the coach or player monitor that the Height and Side Spin do remain exactly the same – remember that the more power is involved in a shot, the more chance there is of a slight error in aiming or off centre cue ball striking.

In this session, make sure that the height selected is just above centre ball and that no side spin is applied.

The purpose of these three sessions is to show the player that by far the most consistent way to escape from snookers accurately is to play with the least amount of variables possible. IE just above centre cue ball to prevent a stun or screw effect, no side spin and no more power than is absolutely necessary.

### **Reaction of cue ball into cushion.**

### **Changing cue ball Height (cue ball Power and Side Spin remain the same).**

#### **General:**

Make sure that the extremes in high and low height are played at least a few times. The power should be about 50% and there should be no side spin applied to the cue ball on any shot.

### **Reaction of cue ball into cushion.**

### **Changing cue ball Side Spin (cue ball Power and Height remain the same).**

#### **General:**

Choose about 20% power here, and if necessary repeat the 'OPP' session with 60% power. This will be usually enough for the player to learn all they need about this shot.

## **Section 6: Positional play on straight shots.**

### **Cue ball position from a straight object ball.**

### **Same cue ball Height, different cue Powers.**

#### **General:**

Usually a straight blue into the middle pocket, or straight pink into the corner are very useful shots to use for these two stages. We do not want a situation where the difficulty of the pot disturbs the results we get from the session which is why an easy pot is selected here.

It is also easier to get accurate feedback on cue ball spin and subsequent reaction when the cue ball and object ball are fairly close together. This is because when the distance between the two balls is great, the only way to change the behaviour of the cue ball on impact is with a lot of back spin or with a lot of power. Being forced to these extremes of spin and power make the session more complicated as the shots are more difficult to reproduce accurately and consistently.

Make very sure that the height the player is aiming on the cue ball is the height they hit! If it is not, the shot should be played again as the positional play results for that shot do not count.

**Cue ball position from a straight object ball.**  
**Same cue Power, different cue ball Heights.**  
**General:**

Same points as in the previous session.



## **Section 7: Positional play on angled shots.**

### **Cue ball position from an angled object ball.**

#### **Same cue ball Height, different cue Powers.**

##### **General:**

Usually a blue ball into the middle pocket is the best shot to use for this session as the reaction of the cue ball from the blue is very clear. This is partly because the cue ball has a lot of distance to travel before it strikes a cushion.

The direction of the cue ball is also very clear to the player because it is not traveling at a big angle to any cushion. Often, the cue ball traveling at a large angle to a cushion and close to the cushion will distort in the players mind the exact direction the cue ball is traveling, perhaps forming a slight optical illusion. This may make immediate and accurate feedback from a positional shot less accurate.

### **Cue ball position from an angled object ball.**

#### **Same cue Power, different cue ball Heights.**

##### **General:**

Same points as in the above session.

Be aware that if these shots are played at less than about 20% power, then even if the cue ball was played at its lowest part, the cue ball may still follow through forwards off the object ball as the backspin will have

dissipated before reaching the object ball. This may confuse the learnings a player can get from this practice so it is best to play most of the shots in this session above 20% power.

Also be aware that any shot played above 80% is very difficult to control and play accurately and consistently. Even golfing legend Tiger Woods plays most of his drive shots at not more than 80% of his available power for this very reason. So it is best to play most of the shots in this session below 80% power.

## **Section 8: Bonus Tip.**

### **Getting used to any new tip in minutes.**

#### **General:**

The following are the OPP sessions you should employ to guarantee any player of any standard will be completely comfortable and match ready with any brand new tip.

Even in the extreme situation of the tip being too hard or too soft for the player's comfort, but where they have no other choice to play with the tip, this process takes no longer than half an hour. However, it can be achieved within a few minutes, when the player has become familiar with this process.

**A. Side spin aiming on a pot. Same Distance, Different Powers.**

**B. Side spin aiming on a pot. Same Power, different Distances.**

**C. Side spin aiming on a safety shot.**

**D. Cue ball position from a straight object ball. Same cue ball Height, different cue Powers.**

**E. Cue ball position from a straight object ball. Same cue Power, different cue ball Heights.**

**Nic's Super Comfort Principle:**  
**All the areas of the game that can be mastered**  
**by any player within minutes.**

Nic's Super Comfort Principle can be applied to all the areas of the game listed in this section.

These areas are broken into logical sections with each of the main physical aspects of technique mentioned. Instead of referring to a limiting template from a coaching book that could be out of date soon or not suit a player's natural style now or in the future, why not just find the body's own perfect way of applying each of the following technical areas in one's game?

This method results in none of the side effects that go with following a doctrine and 'having to get used to it' for a few weeks or months. This is because we are utilising the part of the human mind that helped us to learn to walk when we were barely conscious at two years of age – the unconscious... or subconscious... mind.

Finding the perfect way of applying an area of technique for a player is ideal if done without side effects. This is because in a closed system like the human body, any side effect will of course effect

other parts of technique in an unpredictable way, making the refinement of technique that much more complicated.

The format of each section is to list each part of technique that the player can work with, simply including the 'Range' and occasionally a 'Note'.

The 'Note' will add useful points learned from my having applied these routines hundreds of times in the past, and sometimes gives guidelines based on the experience of professional players in the area of technique covered.

The 'Range' of each aspect of technique assumes you will extend yourself to a slight discomfort at each extreme of the testing scale.

For example, the section in italics below is featured in the main text as one of the routines. By extending to a slight discomfort at both ends of the range laid down, the player develops flexibility in their approach, new spatial awareness within their body and becomes comfortable in wanton experimentation – very important for a player who wants to maximise their enjoyment and long term results in the game.

***“Distance between feet.***

***Range:***

*Both feet touching...*

*...through to moving the outside foot at least one metre away from the cueing foot, ideally until that outside foot cannot move any further away from the cueing foot.”*

It is suggested the player move through the full range of motion for at least three full cycles of hitting both extremes. The reason for this is to ensure a familiarity with what will very often be a brand new movement and experience for the individual. It also gives the body enough of a chance to really feel and appreciate which is the ideal position within the full range of motion.

The beauty here is that the player's body is the highest authority in this process – not any coach, player or instruction manual. This means that the player retains their own power to influence and affirm parts of their game at any time. They will then even then be able to correct a fault mid match just by being able to check in on their inner systems to remind the body of its own ideal way of playing.

Finally, I do not suggest the player go through more than about two of these areas in any one day as this can easily lead to confusion and wasted time. It is better to affirm the ideal approach for two parts of technique in one day and then cherry

pick which parts they want to work on a couple of days later after the cement has dried on the first days work.

Notes on the player's self discovery for each routine can then be written in the margins or in a separate notebook for future reference. This would then make a perfect dictionary of their own ideal technique in every department of the game.

We should by all means read this whole section all in one go, but we should also discipline ourselves to do simple, appropriate amounts of technical work at a time.

If working through each section and routine in the order they appear here, the player should know that all sections, and routines within sections, are placed in a logical sequence.

So a player could go through all sections and routines in the order listed below and know that they are going through them in the best sequence possible for step by step, long term improvement.

We can call this 'The Curriculum Of Perfect Technique'!

## **Section 1: Stance.**

### **Angle stance faces toward the line of aim.**

#### **Range:**

With the foot that is under the cue and nearest the line of aim remaining stationary, move the other foot so the angle of the line that goes across both sets of toes makes a square angle of ninety degrees with the cue and line of aim.

Take this movement through so the outside foot goes well behind this line...

...through to the outside foot being at least one metre in front of the foot on the line aim.

#### **Note:**

Keep as comfortable as possible a distance between both feet on this routine. Remember, it is the angle of the feet to the cue we are concerned with and not the distance between the feet at this time.

### **Distance between feet.**

#### **Range:**

Both feet touching...

...through to moving the outside foot at least one metre away from the cueing foot, ideally until that outside foot cannot move any further away from the cueing foot.



### **Angle of left foot in relation to line of aim.**

#### **Range:**

Toes pointing parallel to line of aim...  
...through to moving the toes so they point both left and right of the line of aim.

### **Angle of right foot in relation to line of aim.**

#### **Range:**

Toes pointing parallel to line of aim...  
...through to moving the toes so they point both left and right of the line of aim.

### **Body weight distribution left and right.**

#### **Range:**

Move hips to the left...  
...through to the right.

#### **Note:**

Keep both feet in the same place.

Keep the cue the same distance from the hip for the duration of this routine as there is another routine for finding the ideal distance from cue to hip.

This means that the cue line of aim will change whenever the hips move, so it is appropriate to get down to the table for this routine with no distracting cue ball to aim at.

## **Body weight distribution forwards and back.**

### **Range:**

Leaning the body weight in toward the cue ball...

...through to leaning the body weight backwards away from the cue ball.

## **Distance from cue to hip.**

### **Range:**

From the hip touching the cue and grip hand...

...through to the hip being as far away as possible from the cue and grip hand.

### **Note:**

To start this routine, the player should get down to the shot as normal. They should then keep the cue stationary and in exactly the same position for the whole routine.

## **Section 2: Bridge hand and bridge arm.**

### **Angle of forearm to line of aim.**

#### **Range:**

Pushed straight ahead toward cue ball...  
...through to bent to a square angle of ninety degrees to upper arm.

#### **Note:**

Keep the weight distribution between the elbow and bridge hand the same throughout this routine. 50/50 would be a good guice for most players to start with.

At all times keep the angle of the bridge hand pointing in the same direction as the forearm, no matter what angle the forearm is pointing.

### **Weight distribution between elbow and bridge hand.**

#### **Range:**

More weight on bridge hand...  
...through to more weight on elbow.

#### **Note:**

Most professionals are at about 50/50 weight distribution between elbow and bridge hand.

An off balance stance in a beginner can cause the bridge arm to be more concerned with preventing the body falling over than in

controlling the bridge hand. This can often cause almost all the weight to be on the bridge hand with virtually none on the elbow. This results in disastrous stability and control of the cue.

### **Height of thumb on first finger for straightest cueing action.**

#### **Range:**

Thumb touching top knuckle of first finger...  
...through to the thumb going down to the middle joint of the finger.

#### **Note:**

The priority here is how straight the locked unit of thumb / finger guide the cue. Physical comfort on this routine is much less important. Many players will be a little sore in their thumb after a couple of minutes doing this, but that is because they are using their muscles in a way they had not done before.

It may take a week or so of playing every day for a novice at this to get fully comfortable with the ideal thumb position.

### **Angle of bridge hand to forearm that provides greatest comfort and straightest cueing.**

#### **Range:**

Start by pointing the bridge hand in the same direction as the forearm...

...through to pointing the bridge hand left of forearm direction...

...through to pointing the bridge hand right of forearm direction.

### **Distance of shoulder from chin.**

#### **Range:**

Shoulder pushed into side of face...

...through to pushed as far away from face as possible.

## **Section 3: Head position – for both physical comfort and ease of aiming.**

### **Angle of head tilt.**

#### **Range:**

Start, and go through the whole routine, with the centre of the chin on the cue...

...through to head tilting to the left of the cue...

...through to head tilting to the right of the cue.

### **Angle of face toward cue.**

#### **Range:**

Head tilt remains the same...

Angle of face pointing down toward cue...

...through to angle of face pointing up toward object ball.

### **Which part of chin on cue.**

#### **Range:**

Head tilt and angle of face both remain the same...

Centre of chin sliding one inch to the left of the cue...

...through to centre of chin sliding one inch to the right of the cue.

**Note:**

This routine is to confirm the ideal position of chin on the cue for aiming. Physically speaking and if it made no difference in aiming, most players will feel best with the cue under the centre of the chin.

Occasionally, though, having a slightly less than perfect comfort on the chin is often less important than the extra aiming ability that comes from having the cue just off centre from the chin.

Watching the professionals on TV will confirm that they do not all cue perfectly centrally under the chin.

## **Section 4: Grip hand and cueing arm.**

### **Angle of forearm to floor when tip on cue ball – side on view of stance.**

#### **Range:**

Forwards of vertical...

...through to backwards of vertical.

#### **Note:**

Go through at least three full range back and forth cueing actions from each position to get a realistic feel for how well each forearm position serves you.

### **Angle of forearm to floor when tip on cue ball – rear view of stance.**

#### **Range:**

Tilting left of vertical...

...through to tilting right of vertical.

#### **Note:**

Go through at least three full range back and forth cueing actions from each position to get a realistic feel for how well each forearm position serves you.

### **Which fingers hold the cue during cueing, backswing and delivery.**

#### **Range:**

Front fingers of grip hand...



...through to all fingers equally...

...through to the back fingers of the grip.

**Note:**

The most consistent players in the world will keep the same finger configuration holding the cue throughout the cueing, backswing and delivery.

Changing the finger configuration for the backswing and strike is not necessary if the player is comfortable with the grip in the cue actions. Changing this can only cause confusion and inconsistency.

## Section 5: Cueing actions and delivery.

### Number of back-and-forth cueing actions.

#### **Range:**

From zero cueing actions...  
...through to five.

#### **Note:**

With zero cueing actions the player has to be on the line of aim as soon as they are on the table as there is no chance for last minute adjustment of any kind. This is a great practice to do for five minutes or so to check the player is getting down to the line of aim.

### Speed of cueing actions.

#### **Range:**

Fast enough that the body moves during the cueing actions...

...through to each complete back and forth cueing action taking no less five seconds.

#### **Note:**

The very slow part of this routine is the best way for a player to find any fault with their cueing action. The slower the cueing is, the more obvious any discomfort or lack of control will be.

With the ability to move the cue this slowly with comfort and accuracy, a player is then able to choose any speed of cueing that is right for them.

It also means they will NOT be forced to cue faster than is ideal just through fear of their cueing faults being revealed if the cue is moving slowly.

### **Length of cueing actions.**

#### **Range:**

Bringing the tip of the cue back to touching the bridge hand thumb on each cueing action...

...though to only having half inch cueing actions.

### **Pausing the cue tip at the cue ball before the final backswing.**

#### **Range:**

No time...

...though to about three seconds.

#### **Note:**

This moment of time is utilised very well by professionals who will check on a number of key factors at this point:

“Is the cue aiming at the correct height on the cue ball?”

“Is the cue aiming at the correct central part, or correct amount of side spin, of the cue ball?”

“Is my body and cue still?”

“Am I physically comfortable, and ready for my smooth backswing and strike?”

## **Speed of backswing.**

### **Range:**

So quick the body shakes...

...through to slow enough that the backswing takes no less than five seconds.

### **Note:**

This routine should be done with a slow paced shot.

It is important to know if the backswing is slow enough that the player can easily move the cue back on the exact line they want, and the exact distance they want, whilst still remaining relaxed and composed.

Whatever ideal speed of backswing is finally decided on should then be applied whatever power the player is using. Almost all professionals keep the same backswing speed on all powers of shot when in practice and in matches.

The more power that is required, the longer the backswing needs to be. This means the backswing should be longer when playing with more power to allow more distance for the cue to build up speed on the delivery. It does NOT mean the backswing should be faster!

## **Time of cue pause at end of backswing.**

### **Range:**

No time...

...though to no less than three seconds.

### **Note:**

Is the cue, hand and shoulder totally still in every way at this pause?

Or is there a digging action into the cue ball, or some other movement in the body, shoulder or cueing arm?

## **How fast the cue starts accelerating on delivery.**

### **Range:**

From instant acceleration (start fast, finish fast)...

...through to smoother acceleration (start slow, finish fast).

### **Note:**

If the player were to feel what a professional is feeling when they start the delivery of the cue, even on a power shot, the player will feel a very gradual slow movement of the cue at the beginning of the delivery.

It would be like a lady getting up from dinner.  
Slow and graceful.

Then walking to the car.

The car will then drive to the motorway and finally reach its top speed.

This way, the body remains very still at all times when the cue is going through the cue ball.

The faster the player starts, the more the player will notice a body shake that occurs as soon as the cue starts moving. This body shake is enough to take the cue off line, resulting in the pot not going in.

### **Length of time down on the table after playing the shot.**

#### **Range:**

Standing up before the cue ball hits the object ball...

...through to waiting for the object ball to hit the cushion or pocket and then waiting for no less than five seconds.

#### **Note:**

This period of time should be long enough that the player is able to take a mental picture of how the shot was played to check everything went well, or to work out how the shot should be played better next time if everything was not delivered perfectly.

Specifically, the player must know exactly how the body, cue and object ball behaved before getting up to play the next shot.

If this awareness is not present, it is impossible to improve ones game.

Remember...

‘What you are not aware of, you cannot control, improve or enjoy.’

### **Distance of follow through.**

#### **Range:**

Follow grip hand all the way into the chest, holding it there after the strike...

...through to stopping the grip hand before it reaches the chest.

#### **Note:**

There is no need to stop the grip hand before it strikes the chest. For the grip hand to finish touching the chest is perfectly natural, and what most professionals experience unless playing a very soft shot.

If the player does consciously, or just through habit, tense the arm enough on the follow through to stop the cue before it reaches the chest, there is no way of knowing if the player started ‘putting the brakes on’ to the grip before the cue ball was struck.

Obviously, putting the brakes on before finishing ones acceleration is a disaster not only for motor racing drivers, but also snooker players.

In addition, the best strikers of the cue ball in snooker are the ones who keep the cue accelerating AFTER the cue has struck the cue ball. This situation will make it futile for brakes to be applied to any shot if a player wants to reach the top of the game.

So now is the time to cut all the brake fluid cables once and for all. The only difference for a player after doing this will be that the only people chasing after them will be their opponents, not 1970's American television detective Columbo.



## Section 6: Rest Play.

### Angle the cue and body point away from stance.

#### **Range:**

Keeping the stance in the same shape and leg position as with a normal shot at the table without the rest...

From the cue and body pointing extreme left...

...through to the cue and body pointing extreme right.

#### **Note:**

Standing behind the brown spot and facing the black end of the table, put the rest on the table near a side cushion. Get down to the table as if playing a shot without the rest.

Keeping the stance stationary at all times, reach over to take the rest and adopt the arms and upper body into the rest play position.

With the exact same position and angle of stance, the player will usually find after having gone through this routine a few times that the cue comfortably points in a different direction with the rest, as it comfortably points when playing without the rest.

There is often a difference of about thirty degrees in cue direction, for an identical position

and angle of stance, of both comfortable rest play and comfortable non-rest play shots.

For recognizing the ideal body and cue position for rest play, feel for a sense of relaxation and comfort in the lower back, shoulders and in both upper arms.

**Rest butt lying on the table to the left of the forearm or to the right of the forearm.**

**Range:**

Play a few shots from both options.

**Note:**

When trying both options, make sure practice is done in manoeuvring the rest head in very fine motions. One can use the blue spot, a few balls or a piece of chalk as the 'target' to move the rest head towards, between and around.

See how accurately and quickly the player is able to move the rest head toward very specific targets.

For example make the rest touch the corner of the chalk without moving the chalk / each rest leg to lay exactly on the blue spot / the rest head to gently touch the exact side each of each ball without moving them, etc, etc.

## **Bridge hand hold under the rest butt or over the rest butt.**

### **Range:**

Just try both options.

### **Note:**

As above, when trying both options make sure practice is done in manoeuvring the rest head in very fine motions. One can use the blue spot, a few balls or a piece of chalk as the 'target' to move the rest head towards, between and around.

See how accurately and quickly the player is able to move the rest head toward very specific targets.

For example make the rest touch the corner of the chalk without moving the chalk / each rest leg to lay exactly on the blue spot / the rest head to gently touch the exact side each of each ball without moving them, etc, etc.

## **Rest directly under cue or to one side of cue.**

### **Range:**

From directly under the cue...

...through to as wide as the bridging arm and rest butt will go away from the cue.

### **Note:**

Cueing back and forth a few times with the tip at the highest position on the cue ball will see the butt of the cue low enough that it can contact

the bridge hand fingers and even the rest itself. It is in this situation that the bridge hand will interfere with and disturb straight cueing.

This is why most professionals (at least those who are best with the rest!) have the rest to one side of the cue.

### **Bridge hand upper arm vertical to table or not vertical.**

#### **Range:**

In position for a screw shot on the cue ball (a little bit later on we will cover the most effective way of positioning the bridging arm for follow through shots on the cue ball)...

From bridge hand upper arm perfectly vertical when looked at from every direction...

...through to the arm at a position angled firstly North, secondly East, thirdly South and lastly West from the line of aim.

### **With tip on the cue ball, distance from end of cue butt to chin.**

#### **Range:**

Starting with the cue butt a hand's length from the chin when the tip is touching the cue ball...

Move from closer to the chin than this when the tip is on the cue ball...

...through to further from the chin than this when the tip is on the cue ball.

**Note:**

Pay particular attention to whether the length of a full backswing for a power shot is easily achievable or not. There should be enough distance between the end of the cue and the chin to make this power shot backswing. A danger here if the distance is not enough it to bring the cue underneath the chin to effectively make a longer backswing possible. Experience shows that bringing the cue underneath the chin on the backswing is disastrous to accuracy and control.

Also confirm that when the tip is on the cue ball, the grip hand is able to move freely and comfortably back and forth. If the end of the cue butt is too far from the chin when the tip is on the cue ball, this freedom and ease of movement will usually be severely reduced.

**End of cue butt hidden inside grip hand, or with a one inch of the cue butt protruding out of the back of the grip hand.**

**Range:**

Try both options...

From the butt of the cue being hidden inside the grip hand...

...through to there being one inch of the butt sticking out from the back of the grip hand.

**Note:**

With one inch or so of the cue visible, the grip is able to concentrate on delivering the cue. It does NOT have to be concerned with holding the cue tight enough to prevent the cue slipping out of the hand when delivering the cue.

It is for these reasons that a visible part of the butt protruding from the grip hand is what the most effective rest players in the world are doing.

**Follow through until cueing elbow straight, or stop the follow through before elbow becomes straight.**

**Range:**

From following through until the cueing elbow is straight...

...through to locking the elbow very shortly after the tip strikes the cue ball.

**Note:**

As pushing the arm all the way through until the elbow is straight is unnatural for many players to begin with, it will pay to go through this full motion a few times without a cue ball until the movement is fluid and easy to perform.

Also note that having a 'frozen' elbow that does not fully release on cue delivery, is one of the

biggest reasons for an imperfect strike and missed pots.

**Follow through of cue in same plane as cue started, or grip hand to drop down toward table bed after strike.**

**Range:**

From delivering the grip hand in exactly the same plane the cue was in when at the address position on the cue ball...

...through to delivering the cue and dropping the hand toward the bed of the table.

**Note:**

The sheer weight of the cue will often draw the players grip hand down toward the bed of the table on delivery. This often results in a wayward delivery, and a grip hand that finishes glued to the rest shaft or bed of the table, rather than finishing suspended in mid air and nicely in mid air like most professionals do.

There is always a danger with this type of follow through that the butt of the cue drops before contacting the cue ball. This would mean the cue ball was unintentionally struck at a different height to that planned, which in turn would detrimentally affect the positional play of the shot.

To contradict this slightly, with screw shots on the rest the cue cannot go straight forward on the same plane all the way to a complete follow through without contacting the cloth of the table. This is because the rest head is much higher than a good player's bridge hand for a screw shot.

Therefore the butt of the cue will always be high, and the cue will always be pointing down toward the bed of the table more than normal when using the rest for a screw shot.

This means that the butt of the cue should drop slightly on the follow through of a screw shot with the rest, just enough to allow the cue to follow through without impacting the cloth of the table.

***With screw shots, butt of cue and chin are up high because the tip of the cue must be low on the cue ball.***

***Therefore for follow shots (where the tip must hit the high part of the cue ball):***

**Keep head at the height required for screw shots and drop cue butt to a lower level (to raise the tip of the cue up the cue ball), or keep chin level with butt of cue whichever position the butt of the cue is required to be.**

**Range:**

Try both options.



## **Note:**

Be sure to make the full back and forwards cueing actions with both cue positions. This will give real feedback as to which position gives most freedom of cueing movement and sense of control over the cue.

Players who are not totally confident with the rest will often be uncomfortable getting their chin, head, shoulders and body all the way down to be level with the butt of the cue with a follow through shot on the cue ball. The remedy for this is to spread the bridge hand elbow out and away from the cue to make it easier for the shoulders to get down to the right level. In addition, pushing the hips back a couple of inches can also make it seem easier to lower the shoulders to the required level.

If the player finds that not keeping the cue level with the chin at all heights of cue ball strike is not the most effective method by far of the two options, they will be the first player I have seen who finds this to be the case!

**Go back to...**

**'Section 5: Cueing actions and delivery'.**

**Apply the nine routines in Section 4 to the cueing action with the rest...**

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