

THE ART OF BALLS

1

**AN ALTERNATIVE APPROACH
TO POOL BILLIARDS**

**PART 1: BASIC TECHNIQUE
PERFECT FOLLOW & DRAW**



**HOW TO ACHIEVE TEN ROCK SOLID SPEEDS AND
LENGTHS FOR VARYING CUE BALL DISTANCES
FROM ONLY THREE ANCHORS TO PRACTICE.**

THE BIG PROMISE

HOW IT ALL STARTED

Imagine you're trying to **learn an instrument**.

What are you going to do first? Play a song?

No.

You're going to practice **single notes**, to learn how to get a **decent tone** out of your instrument.

Quarter notes, half notes, full notes at first. Then maybe eights.

And you will also learn to produce **different volumes. Piano, mezzo and forte.**

And comes time you will go on and learn to produce the different pitches.



AND IN POOL?

We just go ahead and start to play.

And if God wants us to we'll find out how to do it.

No.

Wait.

That falls short of it.



THERE ARE INSTRUCTORS

They show us how to play pool.

They provide us with exercises.

And technical guidance.

However most references systems out there **are neither complete nor do they naturally anchor.**

Some even let you practice drills without telling you the appropriate anchors. A sadist approach.

Even if the system of anchors seems to be complete for pool, they fall short of what music has to offer.

That's bad because pool is just as complex as playing an instrument.



LEMME MAKE AN EXAMPLE

Even a simple **draw shot** is tricky.

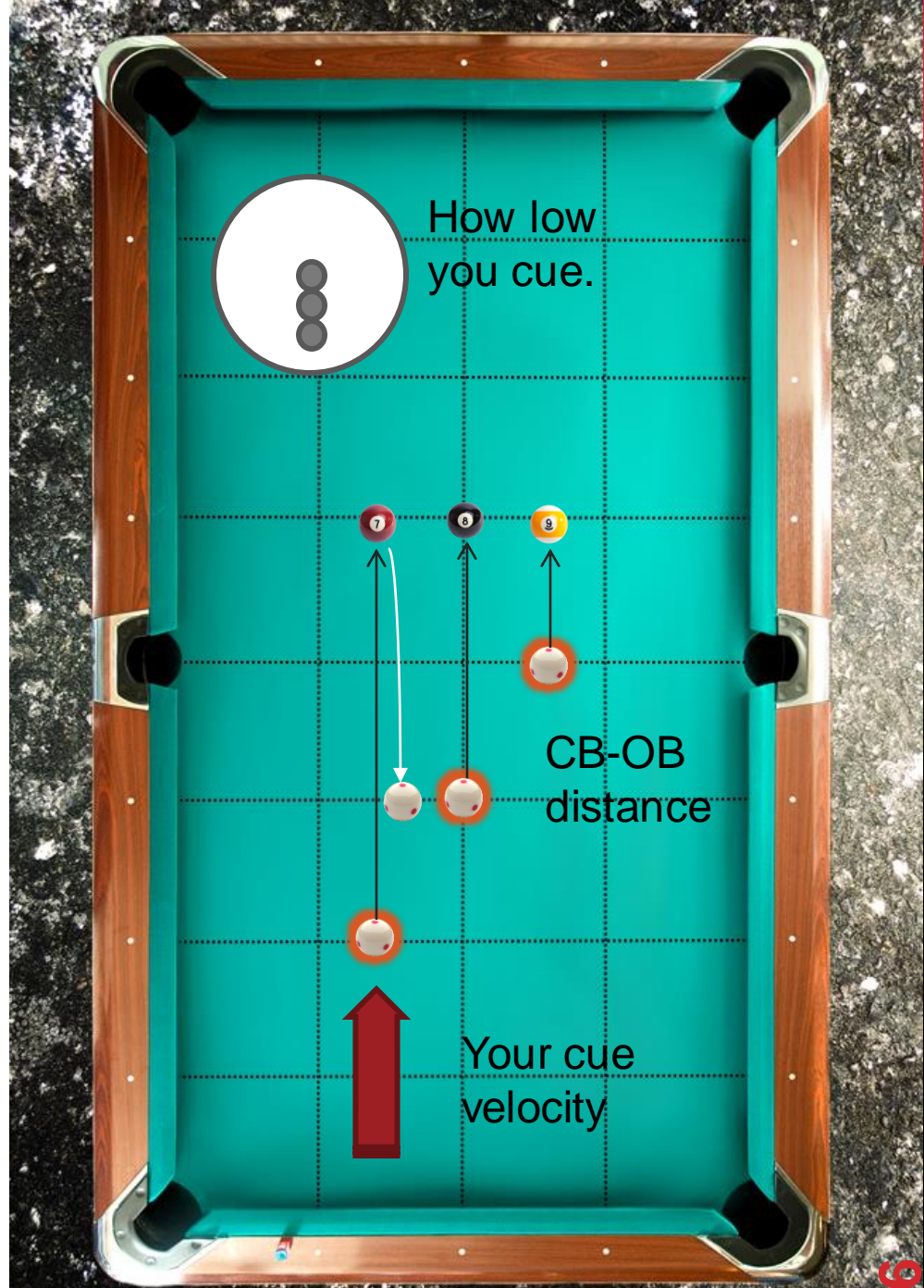
You want to draw the cue ball back after the carom.

And on the table you can even visualize how far you want to draw it back.

But then there's the distance of the cue ball to the object ball → **which has an impact on how far you draw it.**

And there's the velocity with which you can execute the shot → **which has an impact.**

And there's how low you hit the cue ball → **which also has an impact.**



LINEARLY INDEPENDENT

Now those three properties

- queue velocity
- how low you hit
- how far the OB is away

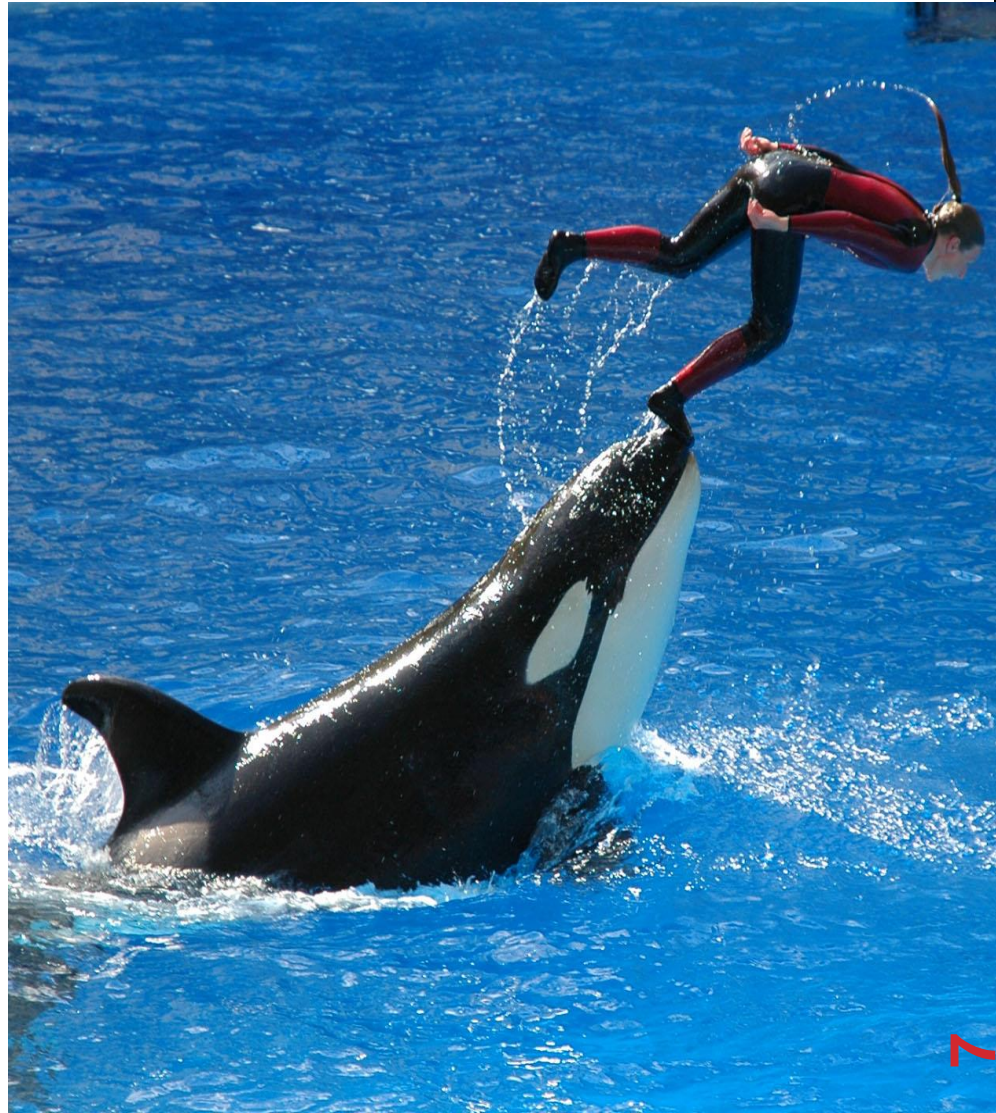
are **linearly independent**.

That means:

Change one, you still have a bazillion of combinations of **both the others** to pick from.

You really can only do random guesswork there and shoot a bazillion of shots, unless ...

... you find some suitable anchors.



IT'S ALL ABOUT ANCHORS

Guesswork is all about the anchors.

If I ask you: „How many liters of water are there on earth?“ – you have no f!cking clue.

That's because you have no anchor.

If I ask you how much gas you have left in your car, then:

- You recall your meter was a tad below half
- You know your tank contains 50 liters max
- You got an old car so you assume „half“ really means there's only about 40% left because of the tank's shape.

So your answer may be „between 15 and 20 liters“, and that will be damn close – at least compared to your guess about the water on earth.

It's 1,260,000,000,000,000,000,000 liters. You probably were a couple million trillions off.



THE WAY POOL WORKS

If you know the shot, you can simply execute it.

Since there's almost never the same shot coming up, you most of the time need a couple of adjustments.

The better your system of anchors, the more precise your guesswork will be and in the more situations it will guide you.

IN TERMS OF MUSIC

So now I'll provide you with a system of **only three anchors**. I call them **volumes**.

Then I'll show you how to play different lengths with these anchors. I call those **notes**.

And if you can play those I'll teach you the **pool scale** in one of the next volumes, so you cannot only shoot straight ahead 😊

And once you have mastered notes and scale we're going to play a couple of games erm ... **songs** together.

LET'S TALK ABOUT THE TABLE FIRST.

STOP!

TABLE AREAS

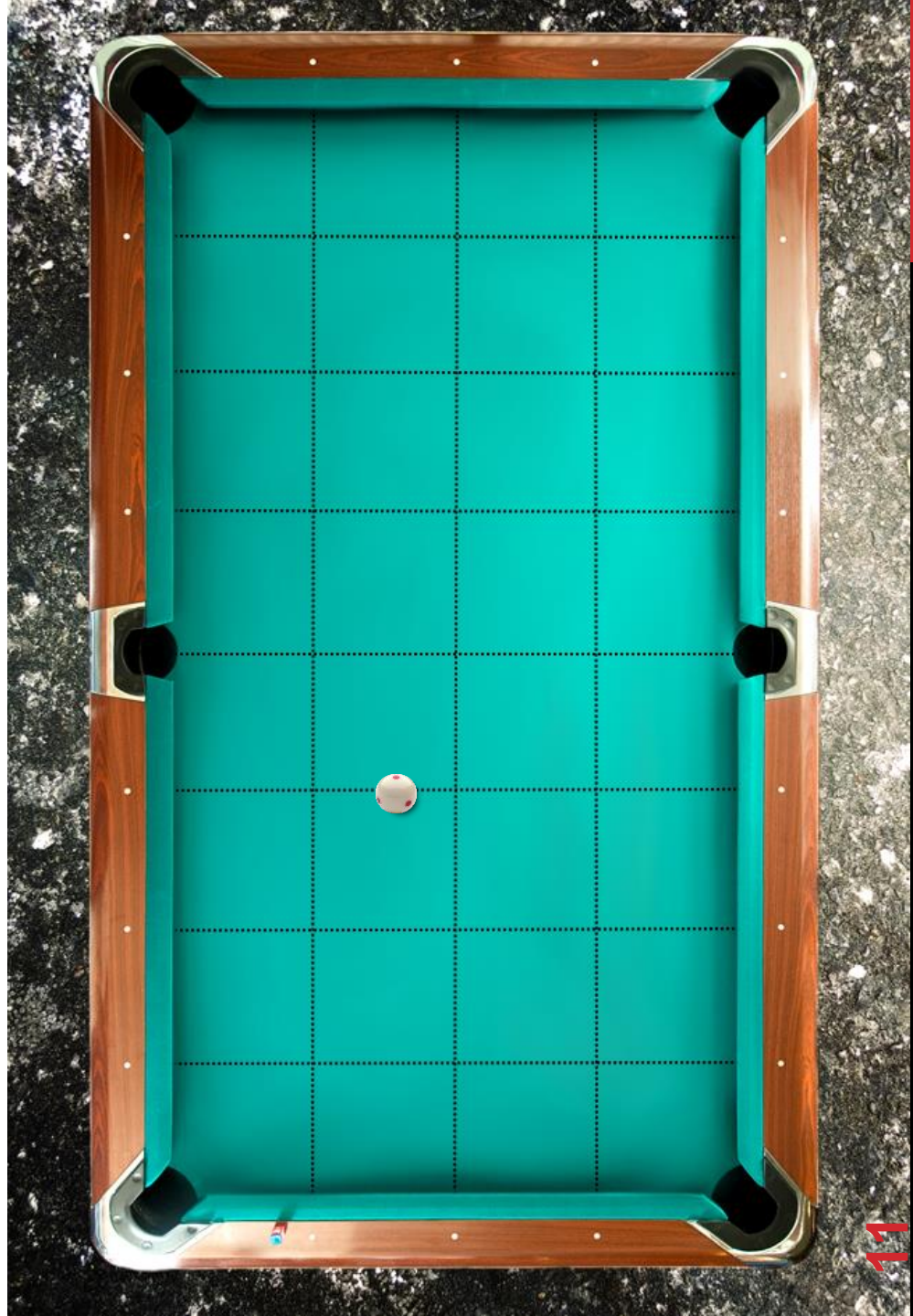
Some people cut the table up in **rectangles**.

Then they place the **cue ball** onto the **lines** or **intersections** thereof. And usually they then play for some **position inside** such a rectangle.

That's just so wrong. I mean ... **where's the symmetry in that?** If I want to make an intuitive system I have to have some basic **input = output symmetry** in it.

So I'd have to draw the lines **between the diamonds**. Well ... happy visualizing. That's also **not intuitive**.

Now I'll divide the table differently. We'll need to **get you away from thinking in those rectangles** in something else, step by step.



BASIC POSITON AREAS

On a pool table there are 3 basic areas you want the cue ball in:

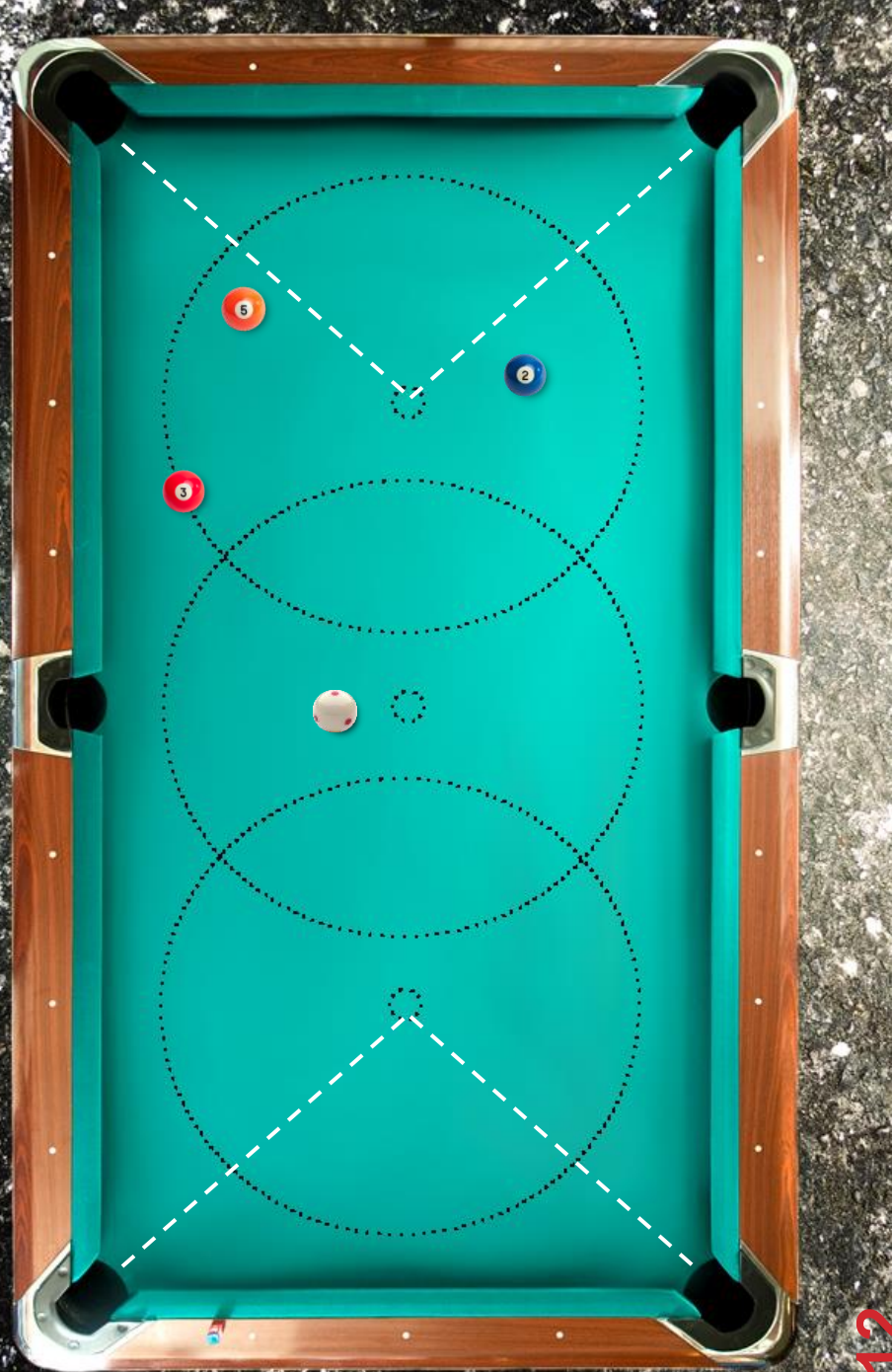
- The area around the **center**.
- The area around the **foot spot**.
- The area around the **head spot**.

Whenever you position your cue ball **outside** of these centers you either have a **damn good reason** to or chances are you are in **deep shit**.

If your cue ball rests **within the center area**, you can play almost any ball on either half of the table that is **outside the indicated triangle**.

Only for balls within that triangle you must play into the head or the foot area. Everything else would be possible without.

Of course, you'll do that anyway for better chains of shots if you're proficient, but it's optional once the table is open.



POSITION ZONES

The next step to refine that is to create a couple more position zones. One at each basic intersection of the diamonds.

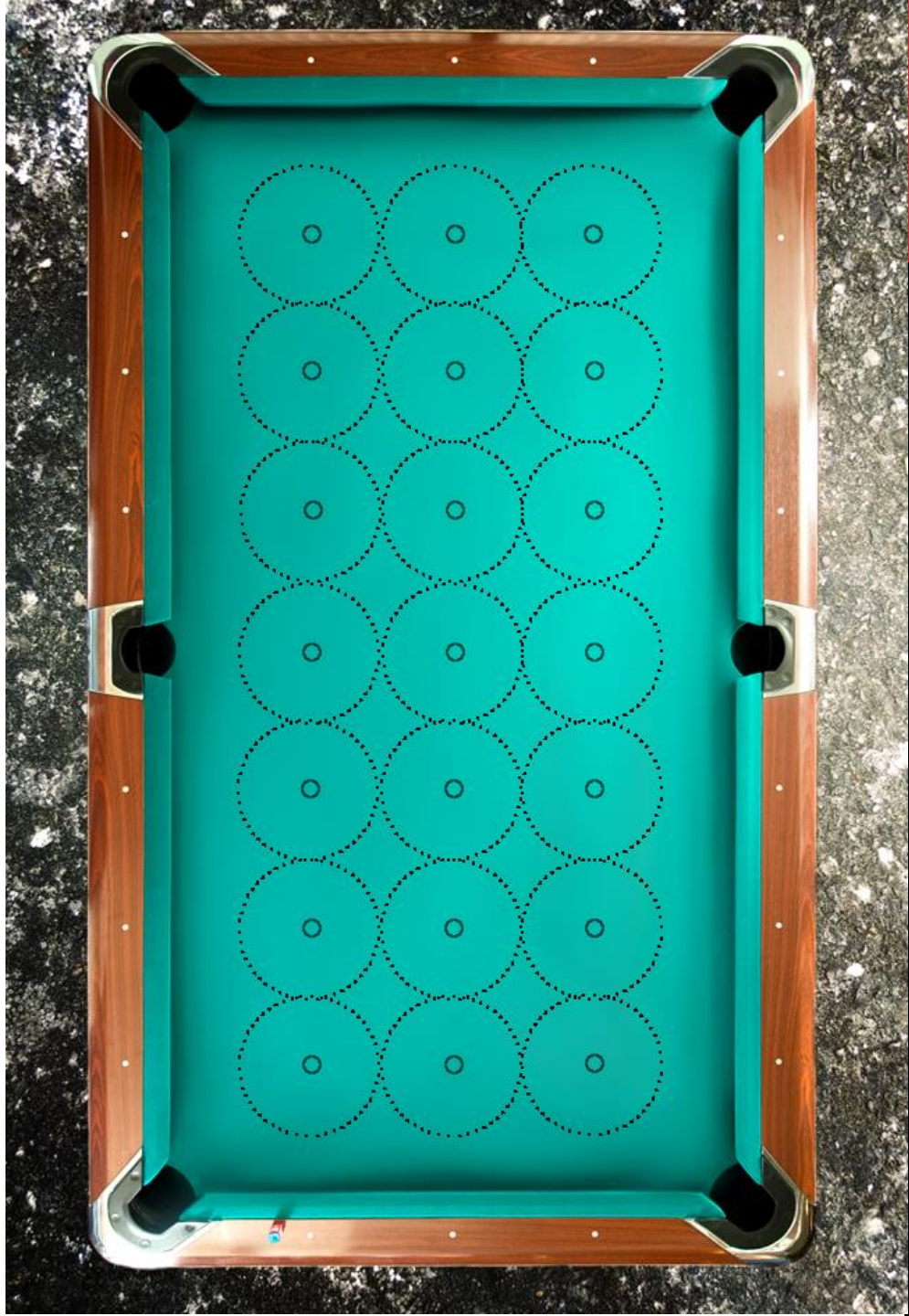
For each of the **three major position zones** there are **nine minor position zones**. Some of those even **overlap**.

So instead of dividing each half of the table in 16 rectangles there's **only 9 circles**. Fair deal isn't it?

You can **shift** most stuff you learn between those major zones.

If you play for position, when you're inside such a circle the position is considered **good enough**.

Of course, in small position play, you sometimes want to **play even smaller**. Maybe **go for the line**, not the center.



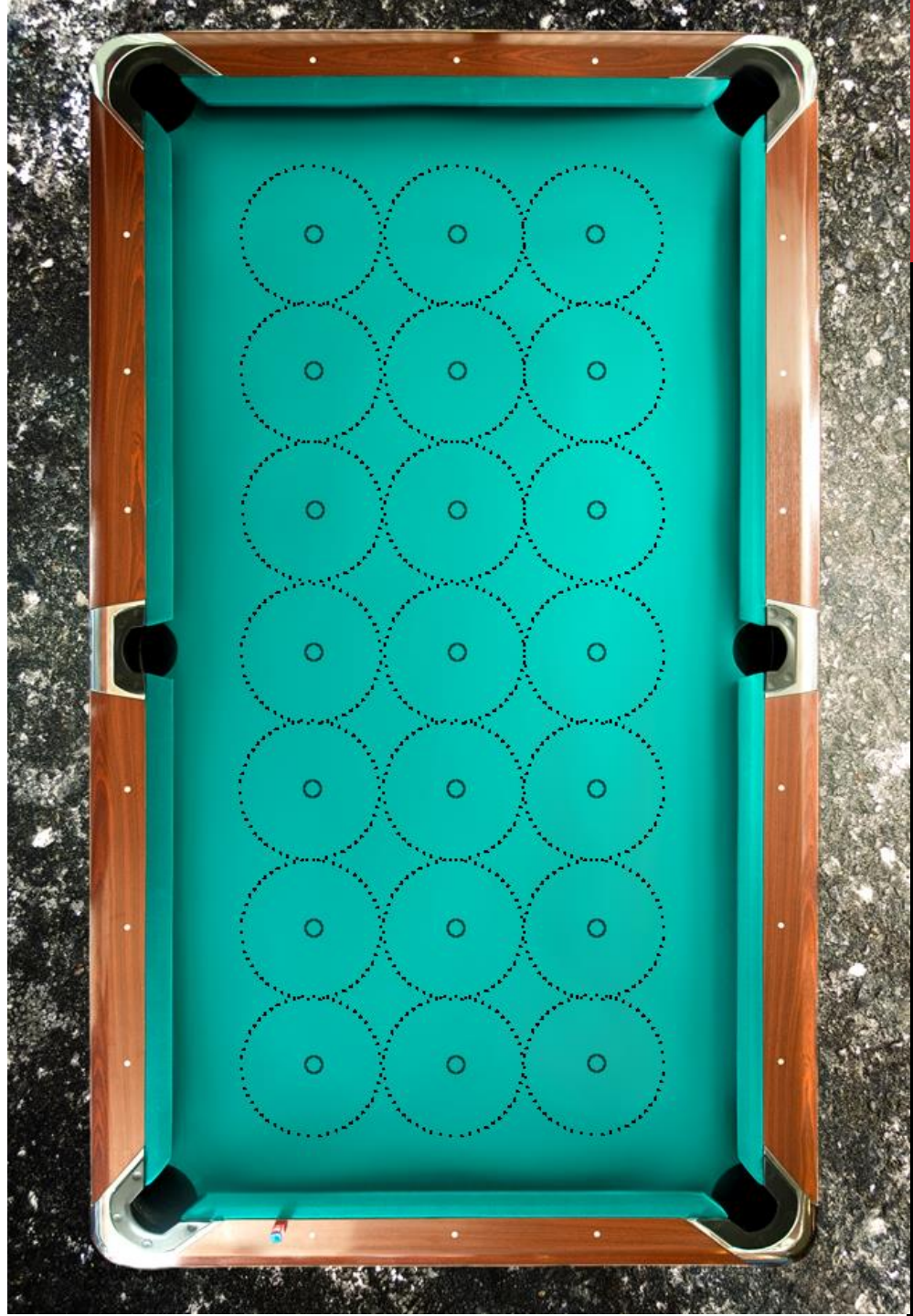
POSITION CREDO

I'll say this **only once** (*cough*).

You want your cue ball **inside one of these circles**, and at times in between.

You don't want your cue ball **outside of those circles** unless you have a **damned good** reason to.

Let's discuss the „outside“ on the next page for a bit.



IF YOU INSIST...

Let's discuss this.

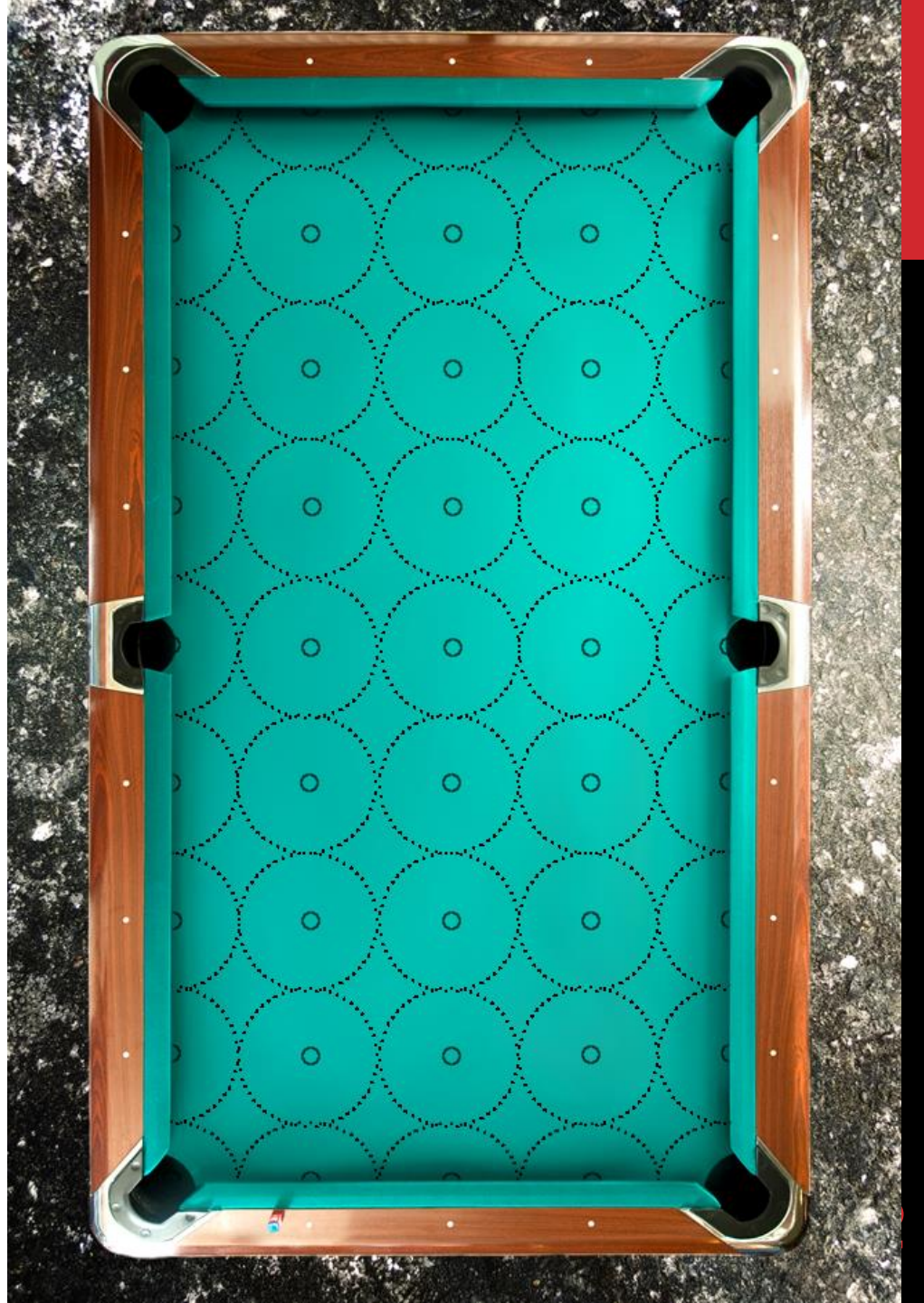
If you play for one of those circles **around the pockets** you're simply **insane** or you like giving your opponent ball in hand.

If you're in one of the top or bottom 3 position zones you better **one or two inches behind the ball** you have to play so you'll get back out.

If you're in one of the position zones along the long rail you either also have an angle or another ball on the opposite side with which you can create one that will bring you back out.

Those are **the only intermezzos** you want to leave the three major position zones for.

Otherwise you **made a mistake**.



LET'S COMPROMISE

I'll take the insane things out.

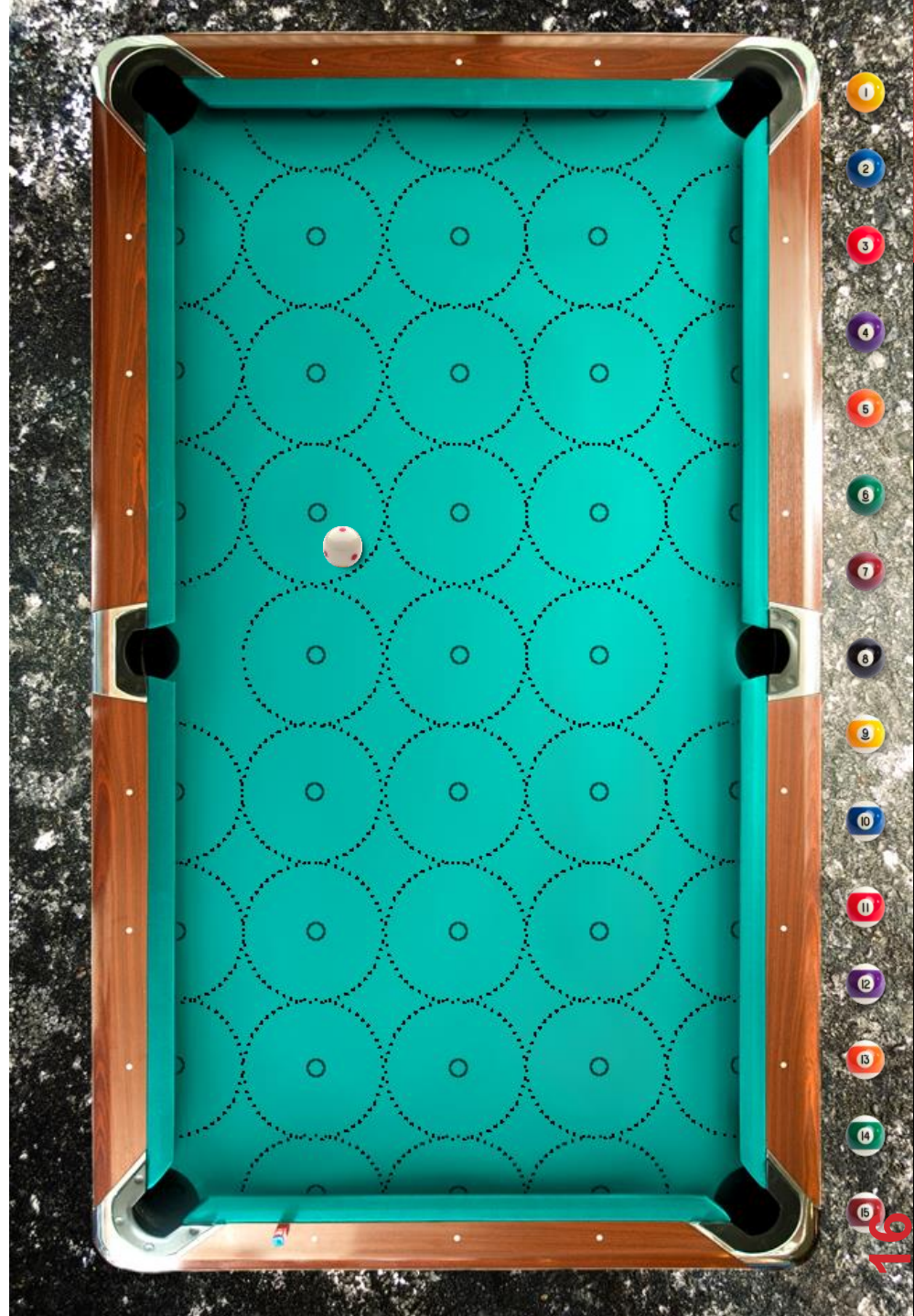
The full circles are your regular position zones.

The half circles are position zones for some particular situations and shots. The exception. The rare.

Capisce?

You'll notice that only the head and foot areas have those half circles.

So it should be clear where you need them ...



LET'S COMPROMISE

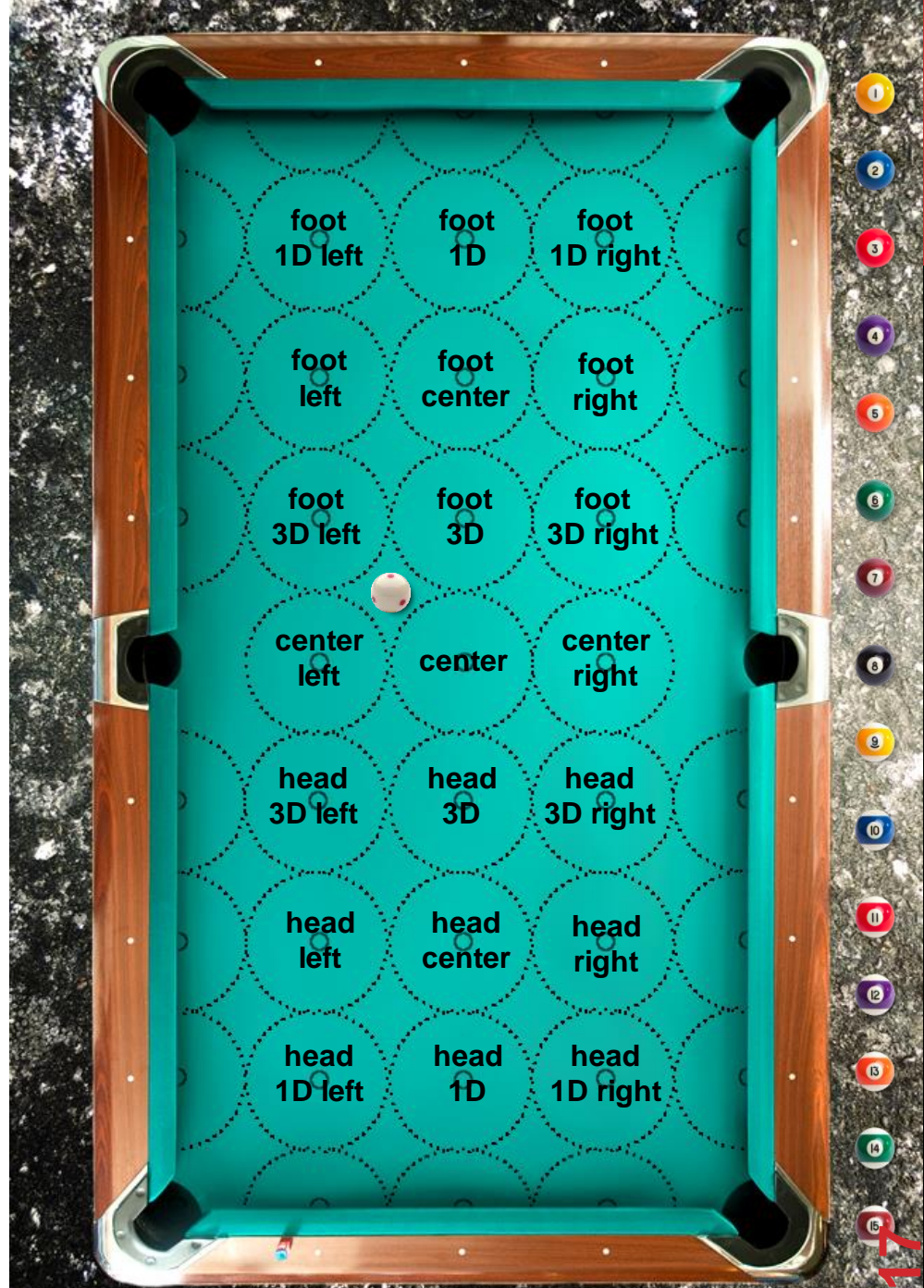
Now naming them:

There's the **center**, center **left**, and center **right circle**.

But top and foot bottom do not work as well. Dependent on the side you view the table from you'll mix it up. Not good. A better attempt would be the diamonds like shown.

But I have something even more interesting. Although it will sound a bit strange to you at this point.

Trust me, you'll see the sense at some point when you follow through this program.



THINK FROM THE CENTER

Let's name them **like notes in music**. From the **center**, we're a quarter note, a half note, a three quarter and a full note off.

You could also say our basic measure is one **half square of a table**.

Then head 1D left, 1D right, 2D left, 2D right etc. are free for the **half circles**. That makes more sense because you usually **count the rail stuff in diamonds**.

So anything named in „xD“ denotes a **half circle around a diamond**.

But we won't need those side areas for quite a while.



NOW WE'LL GET YOU SOLID FUNDAMENTALS.

BASIC NOTES.

ROLLS & SLIDES

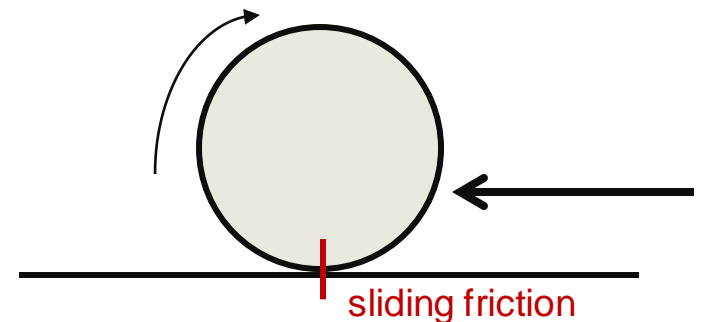
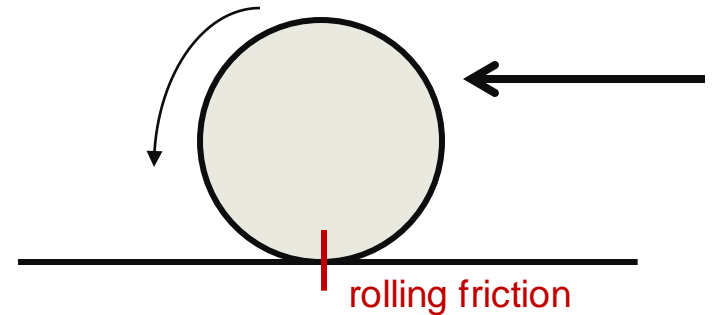
There are two basic shot types in pool:
Rolls and **Slides**.

Roll means the cue ball simply rolls over the cloth, like a marble rolling over a table. This is the shot we will deal with last. Because it's the easiest and at some point we will all come back to it 😊

Slide means the cue ball does not grip the cloth like when it's rolling. Its forward motion exceeds its forward rotation. It doesn't roll over fast enough. So the cue ball **slides over the cloth**.

To achieve this you usually have to hit the cue ball below the center. Or with high velocity.

Of this shot there are many variations. Sometimes this shot is also called **Punch**. Because you hit it on the nose so it falls backwards.



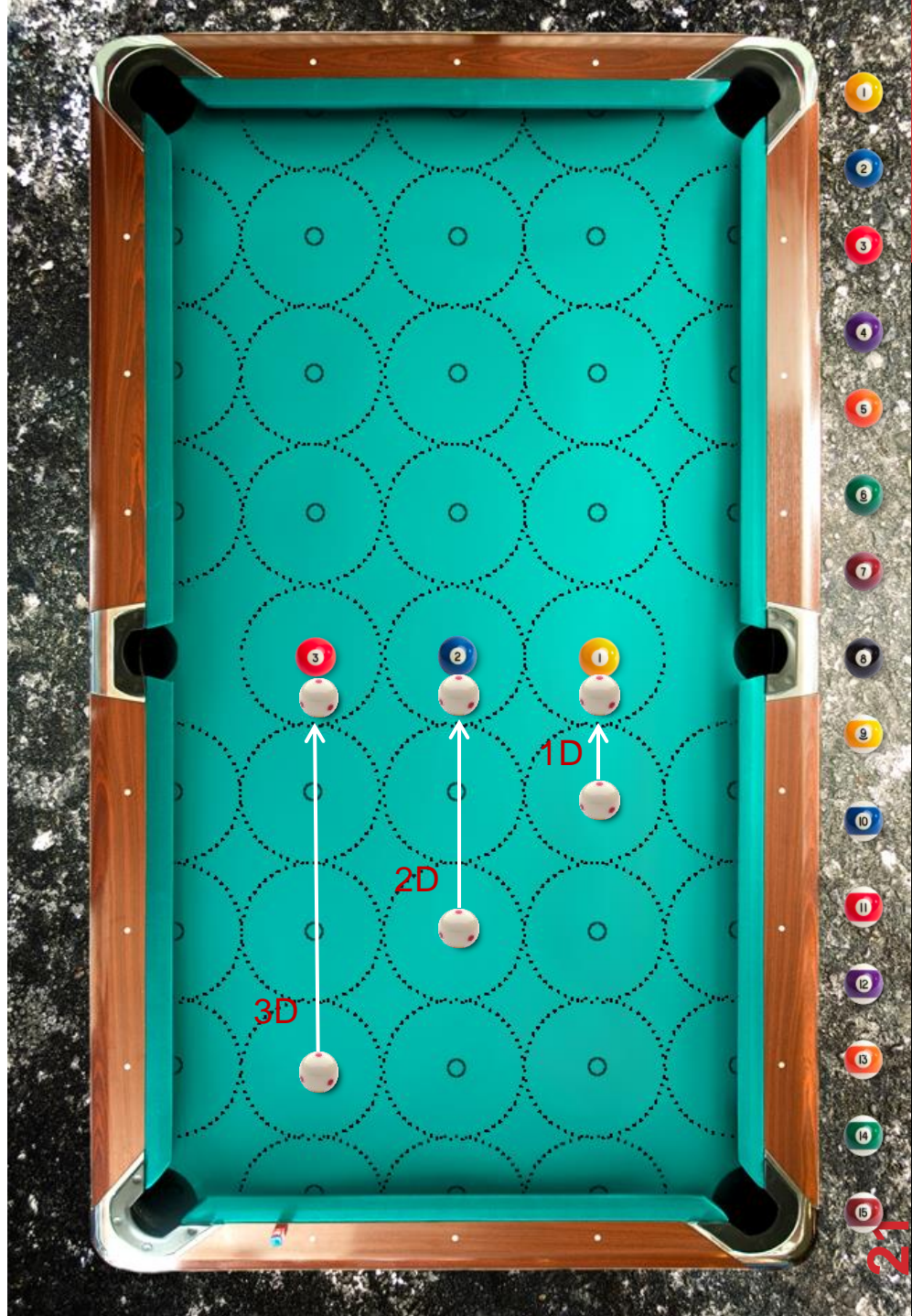
STACCATO: DISTANCE

The first thing a sax player learns is not just blow into his horn and finger the notes, but tonguing each tone separately so the **notes stand for themselves**.

Our **staccato notes** are **stop shots**.

And for reference we will play staccatos from three distances: from one diamond (1D), two diamonds (2D) and three diamonds (3D) distance.

Just so you get used to the Diamond-distance nomenclature. However, we'll shortly introduce a superior way of dividing the table. Since the „(xD)“-System has no natural progression suitable for anchors.



STACCATO: TIP PLACEMENT

There are still two factors left we can manipulate: tip placement and velocity. So I'll fix one of these for you:

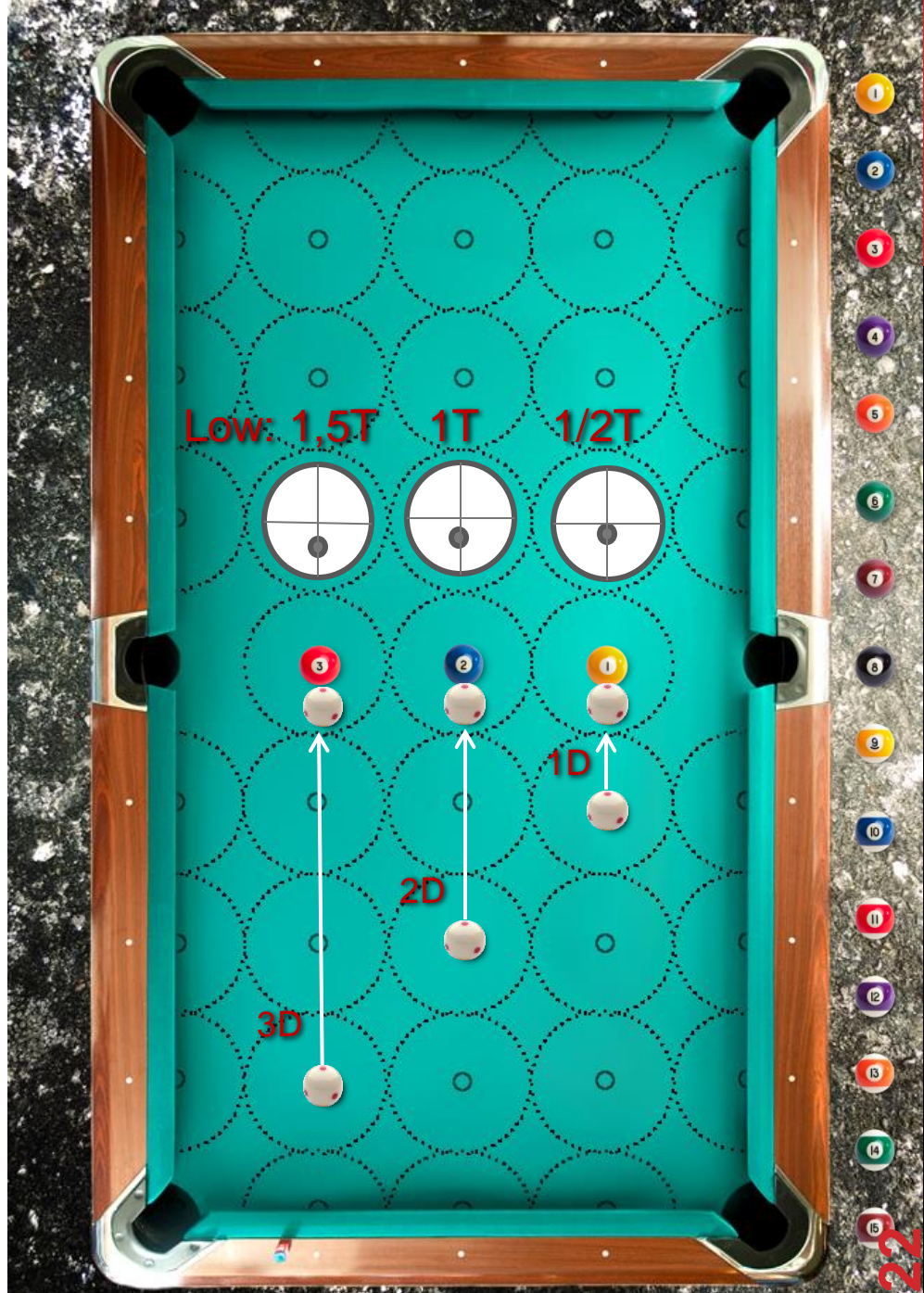
For **1D** distance, staccato is played **half a tip** low.

For **2D** distance, staccato is played **one tip** low.

For **3D** distance, staccato is played **one and a half tips** low.

Memorize these tip positions for those distances. They're your reference.

Don't ask why yet, trust me on this for a while, we'll get back to it. I've chosen these so all the rest will make a consistent anchor system.



STACCATO: VOLUME

Now the velocity you need to get a stop shot is no longer variable. It is a result of the two other factors we just fixed: distance and tip placement.

We will call this velocity **volume** from here on. Only so you don't think in **forceful** terms, so you won't apply force in your stroke. And we'll name the volumes like in music: **piano**, **mezzo** and **forte**.

Piano is the **volume** you need when you want to get a staccato with **half a tip** low from 1D distance.

Mezzo is the volume you need when you want to get a staccato with **one tip low from 2D distance**.

Forte is the volume you need when you want to get a staccato with **one and a half tips low from 3D distance.**

Remember: Staccato is a stop shot.



STACCATO: VOLUME (II)

If you play around a bit you will notice that the lower cue tip position does **not do all the trick**.

If you get your piano speed down and apply it to a 2D distance shot with one tip low, the cue ball will follow the object ball a bit. So **mezzo** volume is a bit **louder** 😊 than piano. You need **more velocity**.

The same goes for switching from mezzo to forte.

Remember those volumes. Practice them. Remember what piano, mezzo and forte feel like. We will need them a bazillion times.



AND PLEASE ...

Don't think in speeds or velocities.

Also don't think in shot strength, firmness, hardness or the like.

Why?

They are images that are linked with concrete actions in your muscles. If I say firm, you tense up your arm. If I say faster, you try to move your arm faster and exaggerate your motion.

All of that is counterproductive.

Volumes have nothing to do with the motion of your arm. So you stay loose and focussed on the target. Yet they still give you a reference. Well. Maybe volume results from clicking balls. But that's not a problem. That's part of the result.

FOR SMARTASSES

Now you can of course say these volumes **feel firm**. Cough.

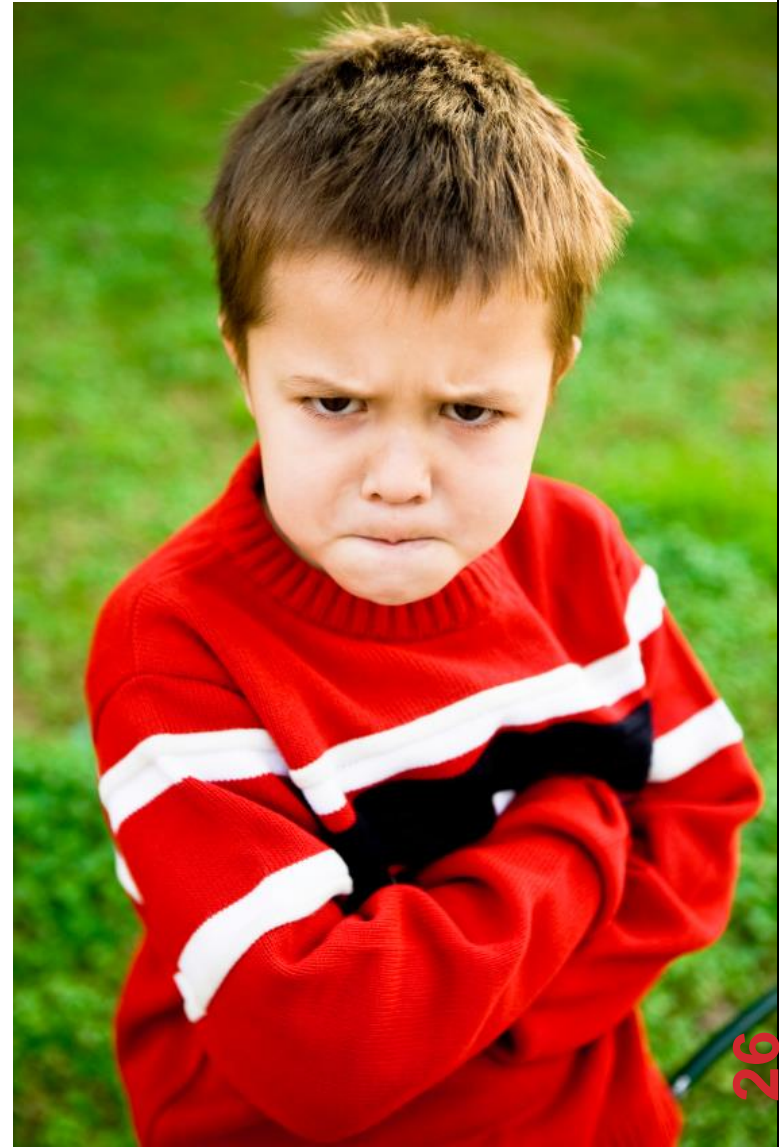
Yes, they do. Our *piano* here is a **solid shot**.

A piano shot is not the most subtle way to play a 1D stop shot, erm piano staccato. That's because we're only applying **half a tip low** for it. And for a reason.

We could also play that shot pianissimo and apply a full tip low. Pianissimo basically means even **less volume**. Some may even play it **pianissississimo** and apply two tips low.

But that would mean using many more volumes. Practicing many different volumes is **tougher** than nailing **three volumes** and varying the amount of low for **a whole set of standards**.

The point is to get solid reference shots.



IN CASE YOU NOTICED

That's probably something you never thought of before.

The volume of this staccato shot, i.e. whether you play piano, mezzo or forte **only depends on the distance between the cue ball and the object ball.**

- 1D distance is a **piano** shot.
- 2D distance is a **mezzo** shot.
- 3D distance is a **forte** shot.

Hammer this into your brain. I want you to start to **think in volume** instead of CB→OB distance.

Since we now know the appropriate cue tip position to make that staccato work.

This is a natural anchor. Since for slides our body-mind has a **natural tendency to increase the velocity with CB→OB distance.**

We're only building an anchor system that **supports this natural tendency.**



FOR QUICK LEARNERS

If you really need to play a staccato softer, you can already do this with our system.

If you're at 3D distance, following the system you apply forte with 1,5T low.

However, in safety play you may want the object ball not to travel as far as forte will drive it.

You can then:

- Play mezzo from 3D with 2T low.
- Play piano from 3D with 2,5T low.

Or from 2D, where you usually play 1T low you can:

- Play piano from 2D with 1,5T low
- Play pianissimo from 2D with 2T low.
- Play forte from 2D with ½T low.
- Play fortissimo (about double forte) from 2D with almost no low.

You probably noticed: It's half a tip up or down for one volume step in either direction.

Now that I call flexible anchor system.

piano (p): 1D, ½T low

mezzo (m): 2D, 1T low

forte (f): 3D, 1,5T low

**pianissimo (pp):
half piano.**

**fortissimo (ff):
double forte.**

That's all you need for now.

QUARTER NOTES

Now let's start to get some music going.
We're going to play **quarter notes**.

And we'll practice them until we really have them down, since they're **the most basic thing there is!**

After a staccato, of course ...

A **quarter note** means the cue ball will **travel back 1D** after the carom. That's a **quarter of half the table** (HT).

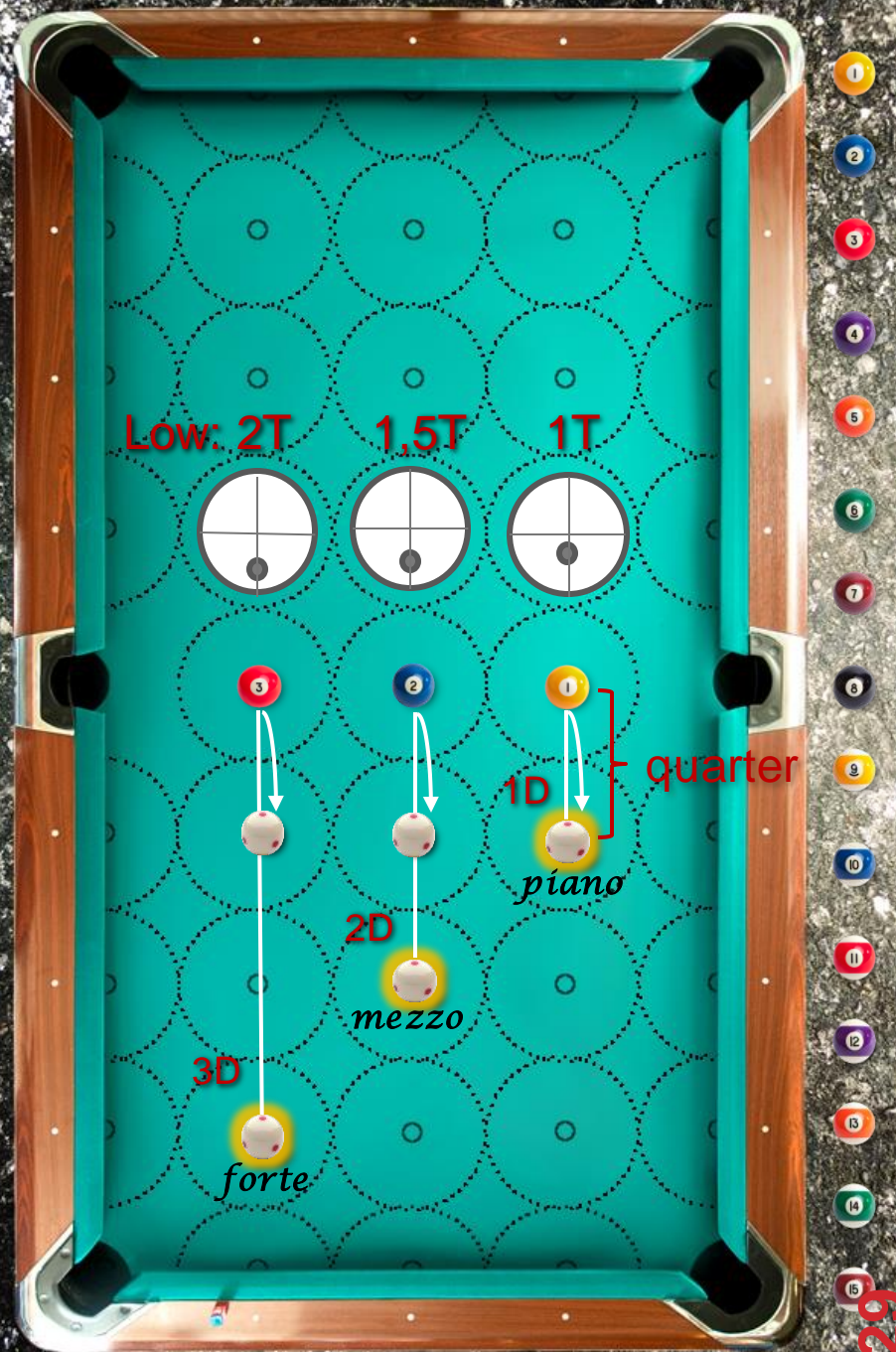
- A 3D quarter is played forte with 2T low.
- A 2D quarter is played mezzo with 1,5 T low.
- A 1D quarter is played piano with 1T low.

So it's simply played half a tip lower than staccato.

And now you also know why I wanted to name those circles the **head quarter** circles.

From center, you play a quarter draw to end up in **head quarter (-left or -right)**.

Precision is ok when you stay within those circles.



QUARTER NOTES (II)

Now that you're getting used to the volumes, we can introduce a short cut:

- A **forte quarter** needs 2T low.
- A **mezzo quarter** needs 1,5 T low.
- A **piano quarter** needs 1T low.

We'll forget about the distance here.

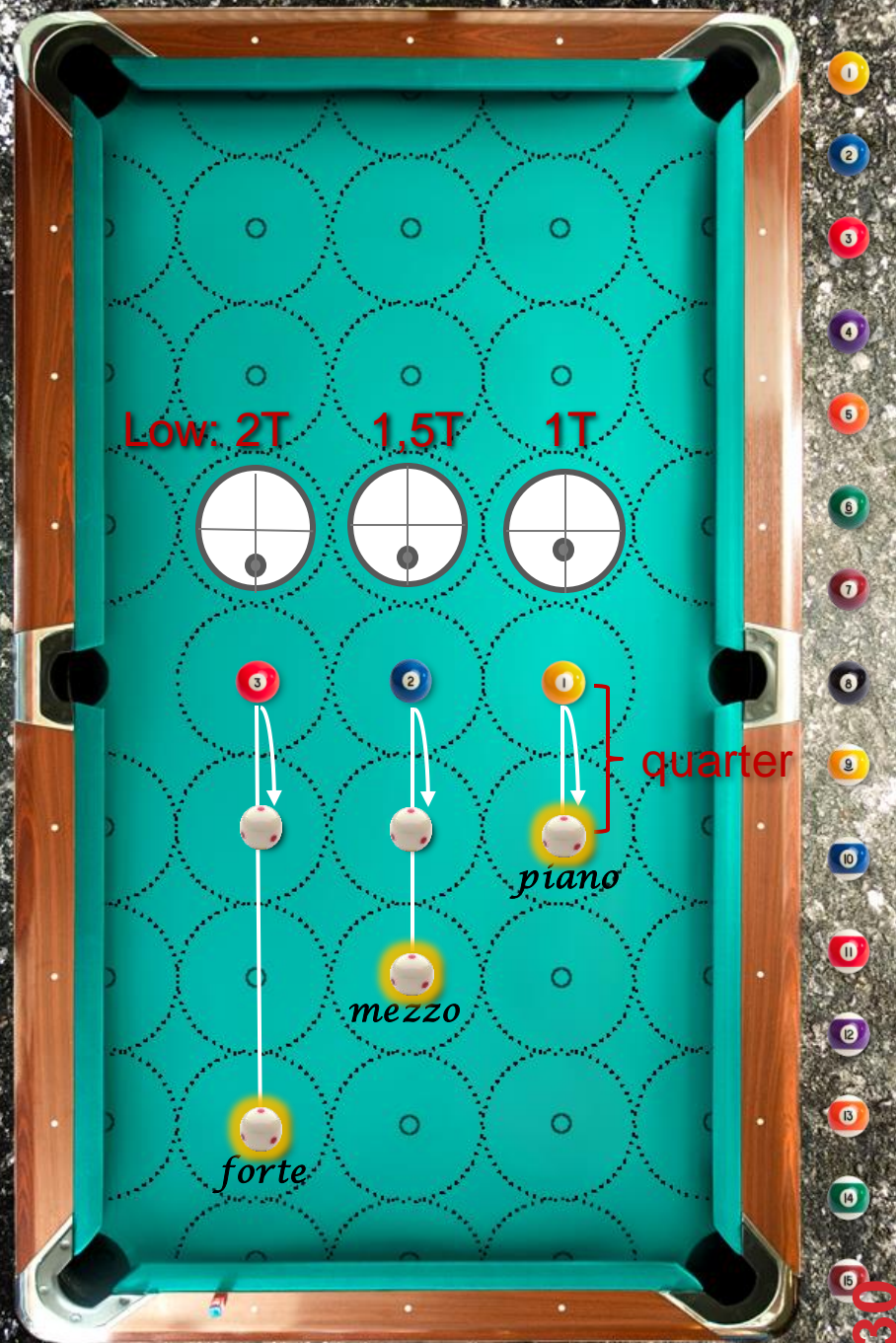
We'll simply call 1D distance **piano distance**, 2D distance **mezzo distance** and 3D distance **forte distance**.

Piano means one circle distance. Mezzo means two circles, and forte means three circles distance.

So whenever you are facing a certain distance, you feel the right speed for it. That's what your body is inclined to do anyway.

So all you have to think of for now is how low you're going to hit the cue ball.

Half a tip lower for a quarter than for staccatos.



STILL DOUBTS?

No need to. I'm not insane. Well, maybe a bit, since I even had to come up with that, and that was a ton of brain work

I dare you:

Watch Efren Reyes or Francisco Bustamante. They're doing exactly that (probably without ever thinking about it) on most shots unless they really have a special situation. They Link CB→OB distance and speed. And on the shots they miss, they often play softer or louder than you'd expect by this system.

They also like to position their cue ball 2D away from the next object ball they have to pot if possible. If it works pretty much everything is played mezzo.

If the cue ball has to travel far after the carom, side spin out of the cushion will usually be used for speed instead of using a false volume.

And of course, sometimes you need exceptions. But if you do, most of the time you're already in trouble.

But there are also players who use different systems. Mika Immonen for example plays one speed most of the time and only changes how high or low he hits the cue ball.

Thus, when watching him, for my eyes he sometimes chooses funny cue ball paths for position play. Funny because I'd expect them to be different. That's because my natural tendency would make me select a different shot.

There's no right or wrong. What's important is to have anchors that follow your natural tendencies. And this system is one proposition thereof. One which works.

HALF NOTES

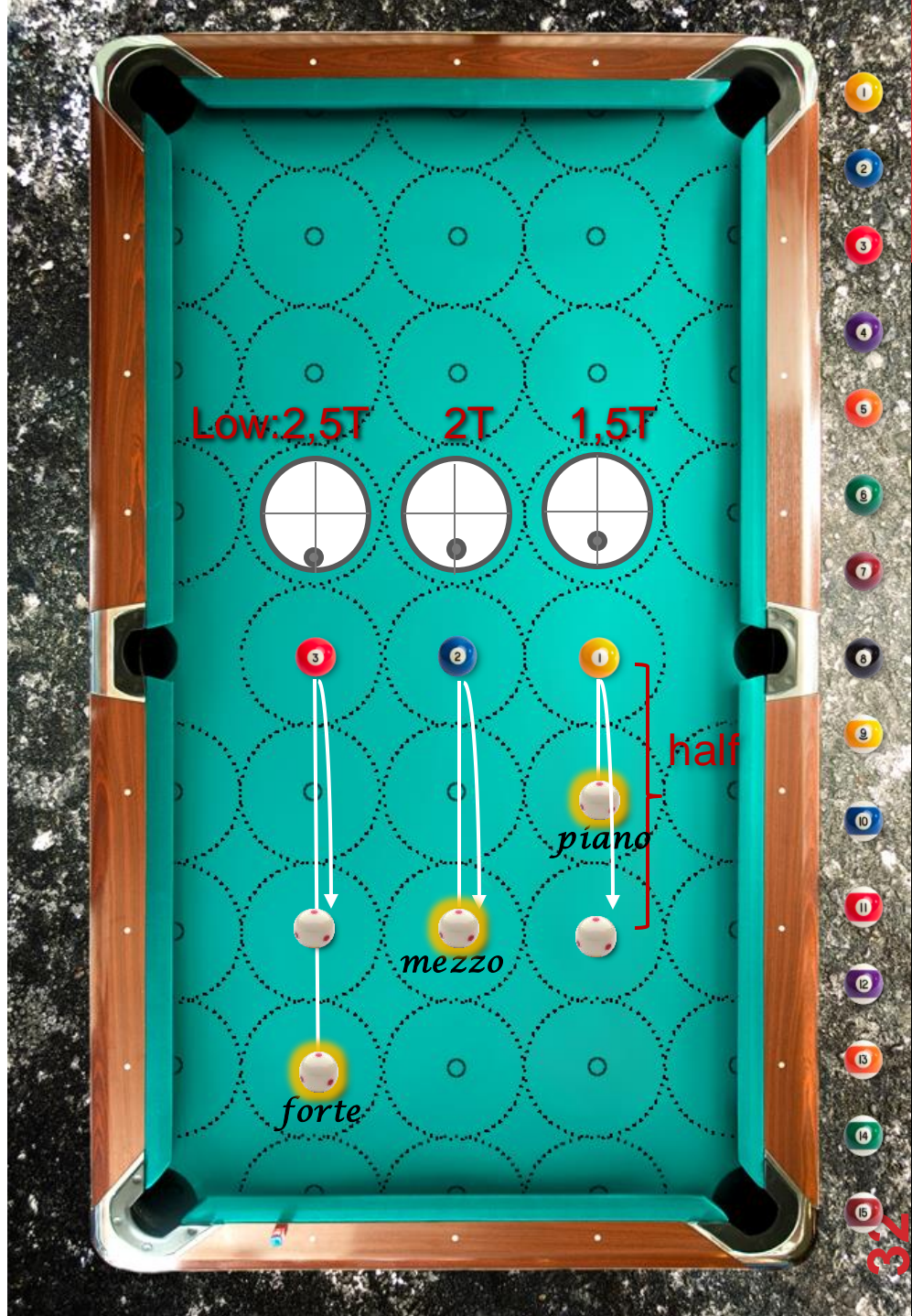
Now that we learned how to breathe into our instrument, we can go for longer notes. We'll do **half notes**.

Half notes make the cue ball travel back **half of half the table**, which is **two diamonds**.

You probably noticed by now that a half table (HT, the length of the short cushion) is my central reference. That's also for a reason.

- A **piano half** needs 1,5T low
- A **mezzo half** needs 2T low
- A **forte half** needs 2,5T low

2,5T low is usually the lowest you can hit the cue ball without miscueing.



FULL NOTES

Somebody might have expected $\frac{3}{4}$ notes now. Nope. Not.

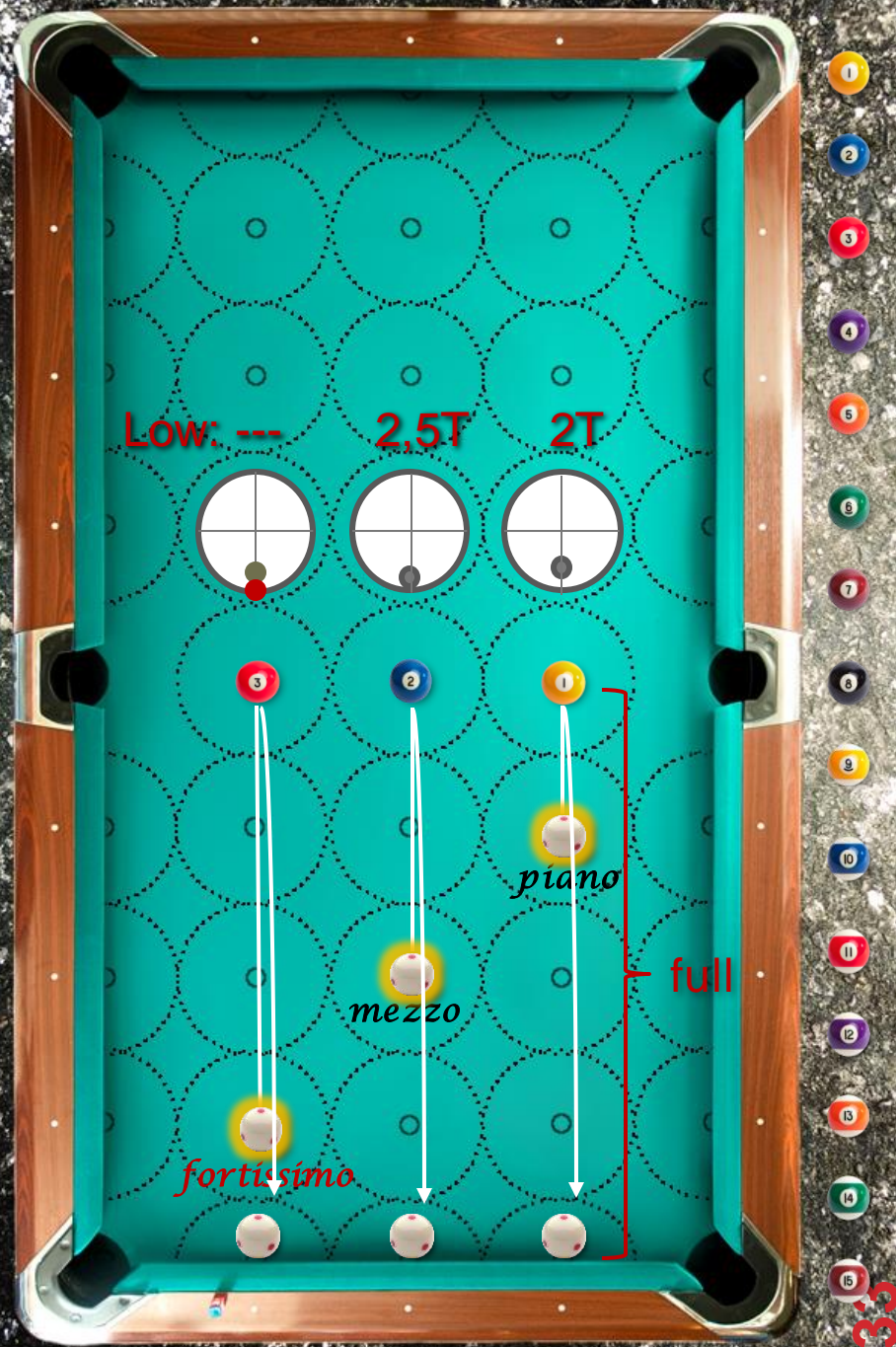
The next natural step you can manage by **hitting the cue ball half a tip lower** are **full notes (4D draws)**.

So to differentiate draws that roll 1D, 2D and 4D back are approximately **equally difficult**. To single out a 3D draw shot needs twice the precision, thus it is twice as difficult.

- A **piano full** needs 2T low
- A **mezzo full** needs 2,5T low (and is a very important reference).
- A **forte full is not playable**.

So to play a full note from 3D distance, you need to apply **fortissimo with 2,5D low**.

Which also implies on an average cloth drawing back half a table from 3D distance is not a baby shot!



A PROPOS CLOTH

Of course this is not a perfect deterministic system, but only a system of anchors.

If your cloth is new and plays fast, piano, mezzo and forte all will be a little bit softer.

The same applies when the balls are freshly polished.

But that's not a problem. If you notice e.g. your shots come back a little far or short, you adjust a little. That's also a natural process.

But you need a reference to even notice how far long or short they come.

But once you have adjusted to the local conditions, the system as a whole again works pretty well. And all you have to feel is a tad softer here or a tad louder there.



DOUBLE NOTES

Sometimes you want to draw further than half a table. You don't need to do this often.

The **piano double** is the only shot that is possible **on system**. So yes, it is possible to reach all the table with piano volume as long as your cue ball is within **one quarter** of the object ball.

The **half distance** double needs to be played maximum low, but forte. So we've also left the system.

The **three quarter double** needs to be played just as low, but with **fff**. That's almost as much as you will get, and most of the time will be your absolute limit.

Please remember, the cushion reduces the remaining length the cue ball has to travel by half.

So dependent on how far away you're from the cushion you'll have to calculate.



INSANITY: THE TRIPLE

The triple is the longest shot you will usually need, and you won't need it often.

It is almost insane and usually not available from **three quarter distance**. It would require fffff, and that stands for **ffffforget it**.

It is a **fff** shot from **half distance**. That's usually the maximum draw distance you will get from half distance.

It is a **forte** shot from **quarter distance**.

So the triple doesn't only require „one step louder“, but **two**.

That makes it **much more difficult** than the double, and differentiating lengths which travel past double length is really difficult, even more so if you want to measure them in single diamonds (which is insane).



THE NATURAL LENGTHS

So there's a series of natural lengths:

- Staccato / stop shot
- Quarter (1D)
- Half (2D)
- Full (4D)
- Double (8D)
- Triple (12D)

They are approximately equally difficult to execute, with the triple as an exception being a maximum shot for 2D distance.

Low (draw)	1D (piano)	2D (mezzo)	3D (forte)
Staccato	1/2T	1T	1,5T
Quarter	1T	1,5T	2T
Half	1,5T	2T	2,5T
Full	2T	2,5T	2,5T ff
Double	2,5T	2,5T f	2,5T fff
Triple	2,5T f	2,5T fff	--

ON DISTANCES

The cue ball in this example is **one quarter away** from the one ball.

That's our **basic measure** which two adjacent circles always have. Of course, you can also name it „one diamond“, if you insist. **A quarter** helps you more though, since the shots are named after it.

How far is it from the two?

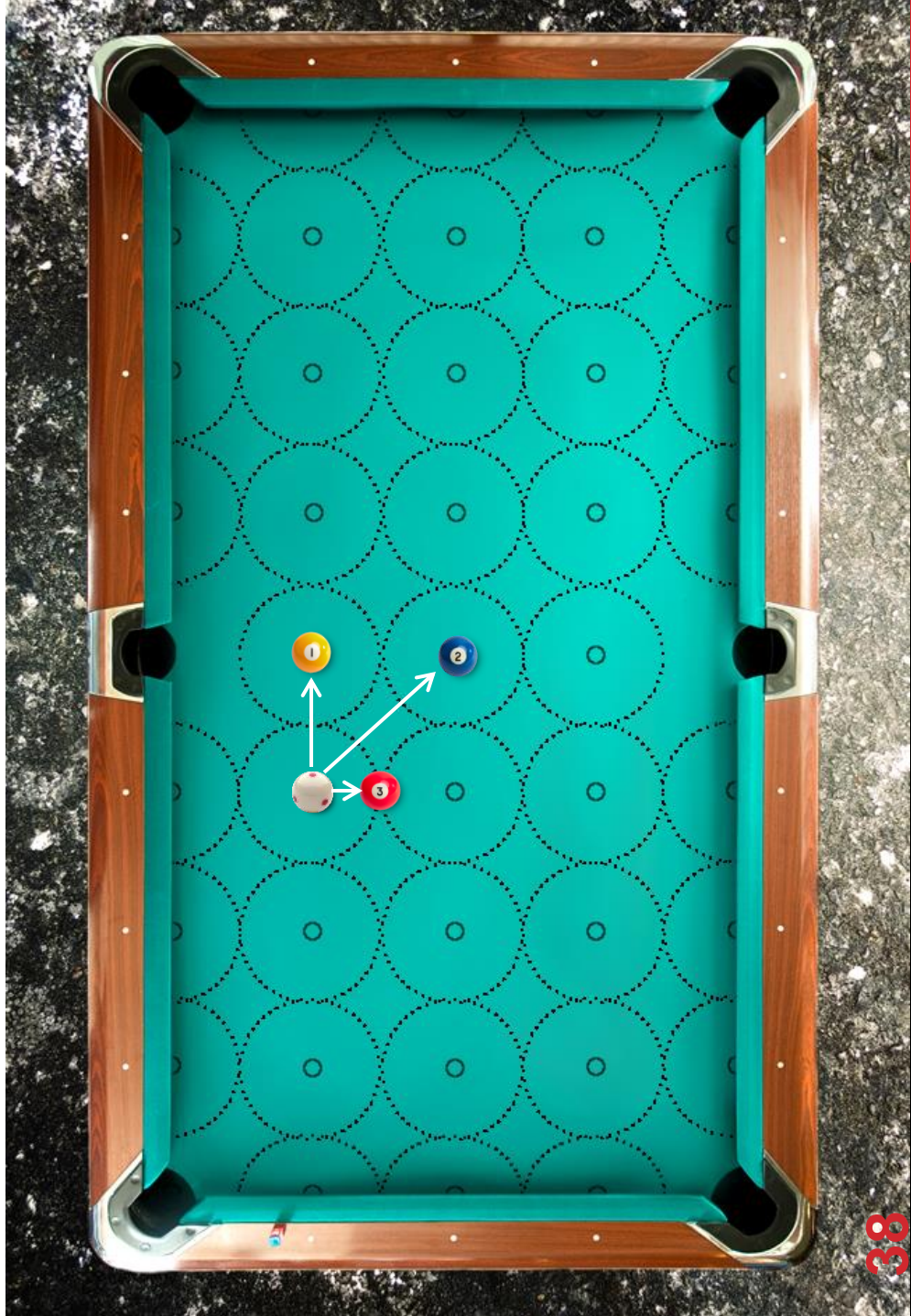
Well, exactly 1.41421356237309 ... ☺

For practical purposes **1.5 is a good approximation** since even over the span of 4 quarters we're only a third of a quarter off.

So to move the cue ball to the center of a field that can only be reached across that diamond-shaped area in between, we need the **in-between shots** on the following page.

The distance to the three ball is just an eighth. That's the distance which sometimes is called **follow slide** or **back slide**, where the cue ball just **trickles back or forth** a bit after the carom.

Here we'll call it **eighth**.



THE IN-BETWEENS

Our table has a couple of **in between**s which also come up every once in a while.

Don't worry about them unless you have the other ones down really well.

But sometimes you only need to come back an eighth. Or three quarters. Or Full and a half. Or double and a half.

I like to keep the speed according to the CB→OB distance, since that's the natural reflex of the body. So I'll hit a tad higher or lower. But of course, sometimes you want to adjust the speed, it depends.

3D full+½ is something you shouldn't go for at all. You'll need to find a volume between ff and fff with maximum low. Good luck. That's even tougher than playing fff.

Low (draw)	1D (piano)	2D (mezzo)	3D (forte)
Staccato	1/2T	1T	1,5T
Eighth	3/4T	1,25T	1,75T
Quarter	1T	1,5T	2T
Three Eighths	1,25T	1,75T	2,25T
Half	1,5T	2T	2,5T
Three Quarters	1,75T	2,25T	2,5T f
Full	2T	2,5T	2,5T ff
Full + ½	2,25T	2,5T mf	--
Double	2,5T	2,5T f	2,5T fff

FOLLOW SHOTS

Of course, with this system you can also execute follow shots. We're not going to execute them as rolls, but also as punches.

Starting from our staccato reference this time we will move the cue tip up. Here, one tip high is usually the maximum which is available as you're cueing down on the cue ball because of the rail. The rest has to be done by mere speed.

Look at the handy center ball references there.

This system loses accuracy starting from double length. But it is really good for follow shots within half a length of a table.

Also, the distance CB→OB loses its significance the firmer and higher you shoot, since the additional distance will not kill the spin off the cue ball as it does for draws (it is not possible to overspin the ball).

Tip placement	1D (piano)	2D (mezzo)	3D (forte)
Staccato	1/2T low	1T low	1,5T low
Quarter-follow	center ball	1/2T low	1T low
Half-follow	½ T high	center ball	½ T low
Full-follow	1T high	½ T high	center ball
Double-follow	1T high +mezzo	1T high	1 T high

Compare this with how difficult it is to play a quarter follow from 2D distance with a rolling cue ball.

DRILLS



DRILL 1: STACCATO NOTES

Set up a row of 15 balls in the center line.

Practice staccato notes to get the three speeds down.

Play 1-5 with piano, 6-10 with mezzo and 11-15 forte from the indicated starting line.

Remember to play:

- Piano with half a tip low.
- Mezzo with one tip low
- Forte with one and a half tips low.



DRILL 2: QUARTER NOTES

In my eyes the most important drill there is.

Practice quarter notes. Practice them good. **Don't allow** yourself too much tolerance. This is the shot you should be able to reproduce most consistently after the staccato. It's the basic unit.

Play 1-5 with piano, 6-10 with mezzo and 11-15 forte from the indicated starting line.

Remember to play:

- Piano with one tip low.
- Mezzo with one and a half tips low
- Forte with two tips low.



DRILL 3: I CAN DRAW

Now let's go dance.

You don't need to practice every single draw distance. Only practice the anchors, but to perfection.

Remember to play:

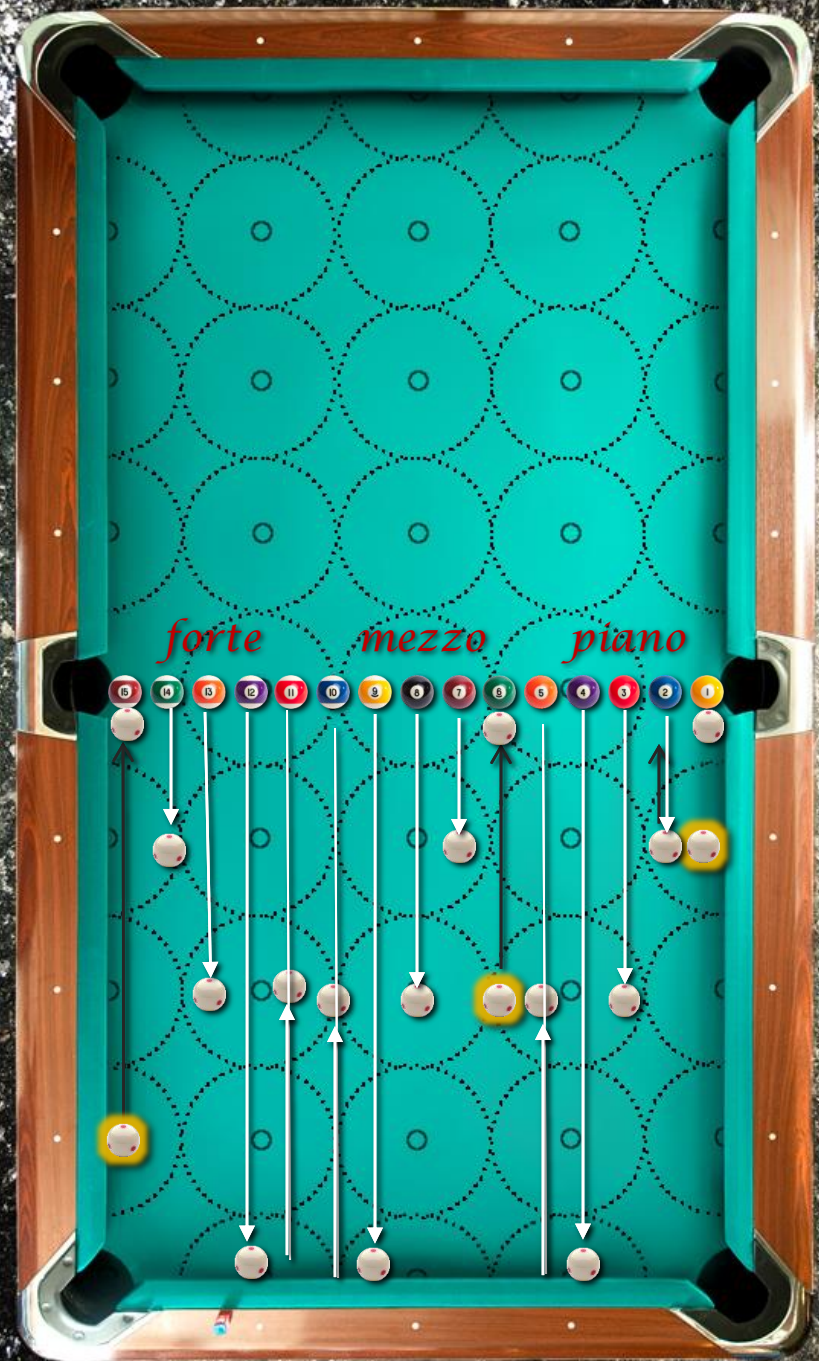
- Staccato
- Quarter
- Half
- Full
- Double

Each for **piano**, **mezzo** and **forte**.

Of course you have to play forte the other way round or the double will fall into the corner pocket.

Remember those who won't go and play a full row of them extra.

You can incorporate this exercise in your long term routine because it sums up all your basic draw anchor shots.



DRILL 4: QUARTER FOLLOWS

In my eyes the third most important drill there is.

Practice followquarter notes. Don't baby them, use the speeds you already know. They need to be played as slides/punches. You wouldn't believe how many established players have problems with this shot.

Play 1-5 with piano, 6-10 with mezzo and 11-15 forte from the indicated starting line.

Remember to play:

- Piano with no low.
- Mezzo with half a tip low
- Forte with one tip low.



DRILL 5: I CAN FOLLOW

Now let's go dance.

You don't need to practice every single draw distance. Only practice the anchors, but to perfection.

Remember to play:

- Staccato
- Quarter
- Half
- Full
- Double

Each for piano, mezzo and forte.

Remember those who won't go and play a full row of them extra.

You can incorporate this exercise in your long term routine because it sums up all your basic follow anchor shots.



TO SUM IT UP

You practice five basic notes:

1. Staccato
2. Quarter
3. Half
4. Full
5. Double

You practice them as draws and as follows.

You practice them at three volumes.

You practice them because they are **almost equally difficult to achieve** and all you have to adjust is the amount of high or low for each cue ball distance, as long as forte is sufficient.

And if you ever need a note **in between**, just play **in between** and you doubled your repertoire.

Add your maximum shot and that gives you **ten rock solid lengths** the cue ball travels.

You can do that by either raising or lowering the cue tip a tad.

Or you can insert speeds:

- *pianíssimo* (pp)
- *mezzopiano* (mp, between mezzo and piano)
- *mezzoforte* (mf, between mezzo and forte)
- *fortíssimo* (double forte)
- *forte-fortíssimo* (fff, your max)

And sometimes maybe:

- *piano-pianíssimo* (ppp, baby it)

With mezzopiano and mezzoforte you will reach the positions between the circles.

Most of the time you only use **three speeds**.

That gives you **ten rock solid speeds** and lengths for varying cue ball distances from only **three anchors**.

Did I promise too much?

END OF PART I

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