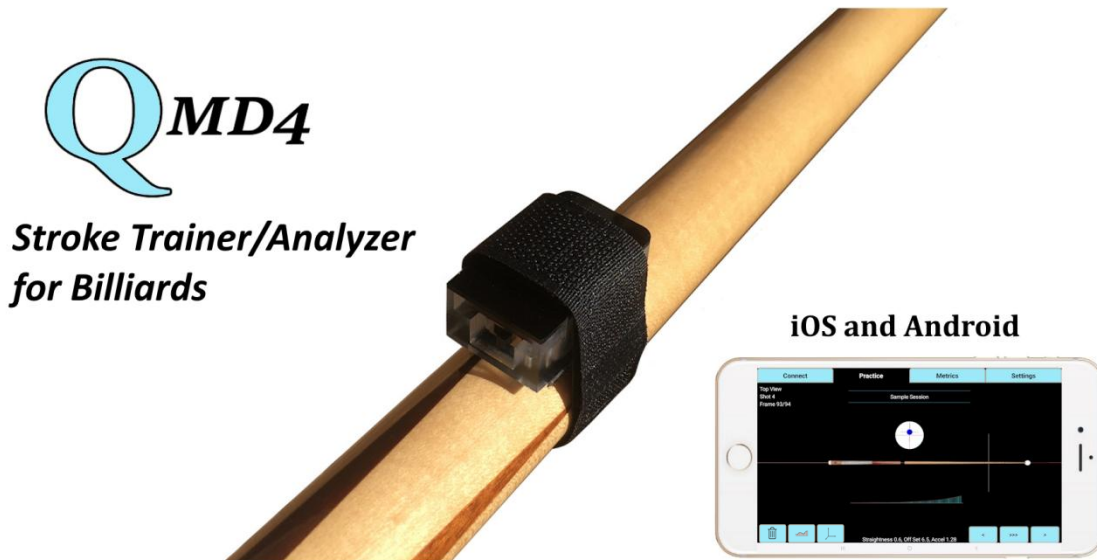# QMD4 for iOS and Android User Guide

A Step-by-Step guide for getting the most out of your QMD4 device.

This guide focuses on using QMD4 with iOS (Apple) and Android mobile devices such as your iPhone, iPad, Smartphone or tablet. This guide includes a step-by-step tutorial to help get you started using QMD4. It also provides additional details of the functions and features of the QMD4 unit and software.

Note: The software screens shown in this guide are taken from different types of mobile devices, both iOS and Android. The software functions the same on all platforms and the screens are almost identical.

Any questions or comments are welcome, please contact our customer support for any concern you have at info@theQMD.com. We value and look forward to your feedback.

Contents

What QMD4 does

QMD4 is an orientation/motion sensing device specifically designed to aid you in developing a smooth, consistent, accurate and straight billiards stroke.

- QMD4 audibly alerts you when your practice strokes are off-line. Left or right tones are instantly generated if your stroke deviates laterally from your straight target line. The instant audible feedback allows you to adjust and attain a truly straight stroke. The sensitivity of QMD4 to off-line movements is user adjustable to best fit the way you stroke.

- QMD4 automatically records the motions of your shot and instantly shows you a graphic animation of your cue stick when you take a shot. The shot is recorded from the start of your back stroke through contact with the cue ball. The animation allows you to see the path of your cue stick compared to a straight path, thus enabling you to identify the part(s) of your stroke that are off-line. Top, side and back views of the animation are provided, as well as a Deviation and Velocity chart mapping the movements of your cue. The animation may be viewed immediately after the shot is taken or, since all shots are saved, reviewed individually after you've ended a practice session.

By providing you with instant feedback and graphic details QMD4 aids in developing/refining your stroke and improving your playing results.

What's in the box
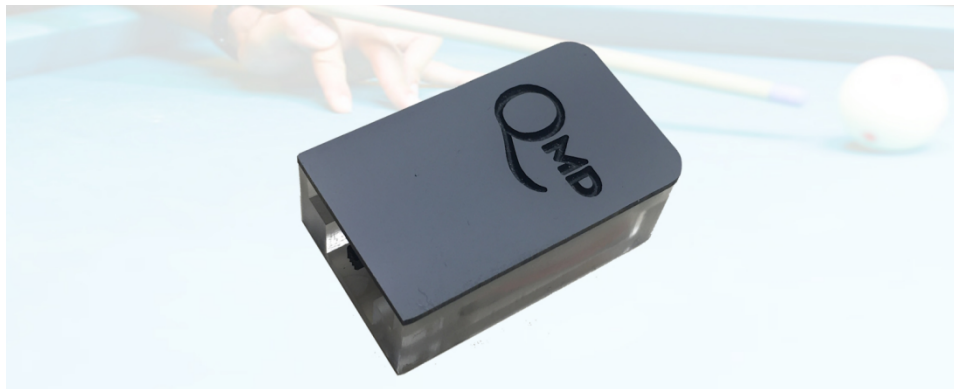
Your QMD4 package includes…

- The QMD4 unit
- Adjustable Velcro mounting strap
- Cue butt device housing
- USB charging cable
- Storage case

Tutorial Step 1 - Installing the Software

To begin using QMD4 you need its software installed on your mobile device. The software is available free from the **Apple App Store** or **Google Play Store** - search for 'QMD4'. Install the software as you would any software from the App Store or Google Play Store. The minimal iOS (Apple) system requirements for using QMD4 are iOS 10.3 with Bluetooth 4.2. The minimal Android system requirements are Android 5.0 (Lollipop) with Bluetooth 4.2.

The first time you use the QMD4 software you will likely be asked to allow some permissions. You need to allow these requests. Requesting Location permission is most common, it is needed for Bluetooth to work properly in locating/connecting with the QMD4 device.

Tutorial Step 2 - Mounting the QMD4 unit

The QMD4 unit comes with an adjustable Velcro mounting strap and a flexible cue butt device housing.

To use the butt end housing insert the QMD4 device, rounded end first, into the rounded end of the housing, press until flush. Then attach the housing to the butt end of your cue. The housing should be fit firmly to your cue and the on/off switch should be accessible. The Velcro tabs on the inside of the holder can be removed/adjusted to obtain a good fit on your cue. If you're concerned you might mar the finish on your cue first wrap it with a layer of masking tape. Over and under sized diameter holders are also available, contact us at info@theQMD.com. To remove the QMD4 from the housing, as is needed for charging, remove the housing from the cue and push out the device with a finger (or eraser end of a pencil).

To use the mounting strap adjust it to an appropriate loop size, hold the device in the loop and slide the unit and strap down over your cue tip to the area between your cue's joint and wrap. The rounded end of QMD4 should face towards your cue tip, the open end (where the on/off switch is located) towards the butt of your cue. It should fit firmly and parallel with your cue stick, if not adjust the mounting strap so it does. The unit can be mounted on other parts of your cue stick if you'd prefer, even the butt. However, it's important that it fits firmly and parallel.

Tutorial Step 3 - Starting Up your QMD4 unit

With your software installed and your QMD4 unit mounted on your cue you're ready to start up. **Lay your cue flat and still on the table with the QMD4 unit positioned level on top.** Turn on the QMD4 unit by sliding the on/off switch on the back of the unit to the right. A slowly blinking green, 'Bluetooth scanning' light will appear. You're now ready to connect your QMD4 unit and your mobile device with a Bluetooth connection.

IMPERTENT: Whenever turning on QMD4 be sure your cue is laying still and flat on the table and the QMD4 unit is oriented in a flat horizontal position on the top of your cue.

IMPERTENT: This is being repeated because it is very important: **Whenever turning on QMD4 be sure your cue is laying still and flat on the table and the QMD4 unit is oriented in a flat horizontal position on the top of your cue.**
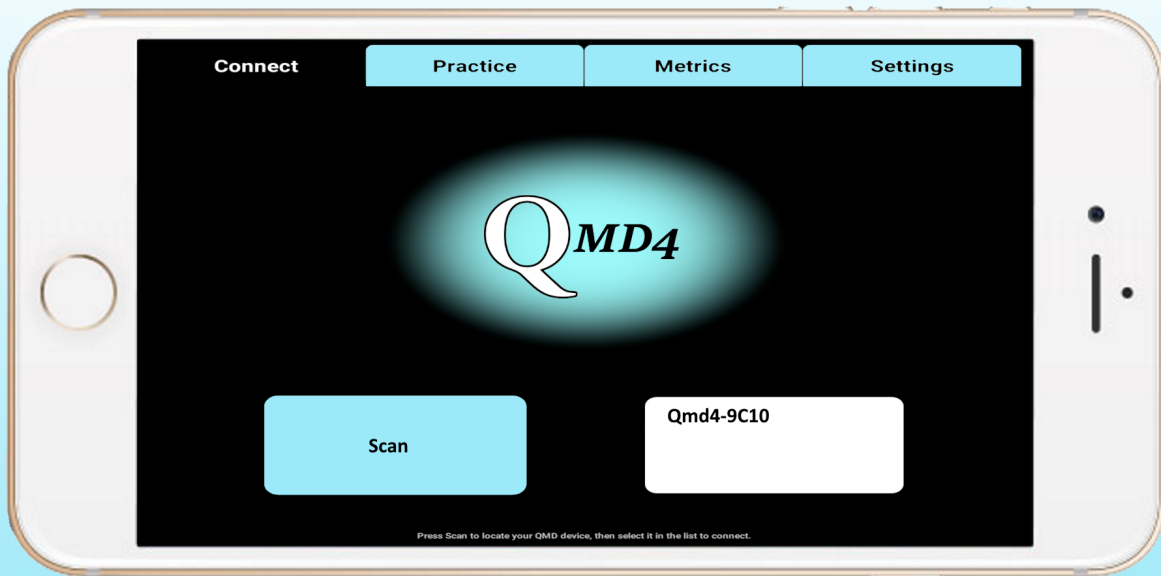
IMPERTENT: If you do not have a slowly blinking green light after turning on QMD4 it did not start up properly. Turn the unit off and on again, you will see a blinking light when it starts properly.

Tutorial Step 4 - Connecting with Bluetooth

IMPORTENT: Be sure Bluetooth is turned on in your mobile device. To check go to your Settings and look under Bluetooth and turn it on if disabled.

With your QMD4 unit's green light blinking and its software opened on your mobile device you're ready to connect the two together through a Bluetooth connection. On the **Connect** screen of the software click the **Scan** button.

Easy two touch BlueTooth 4.2 scan and connect.

| | Connect | Practice | Metrics | Settings |

Q**MD4**

Scan

Qmd4-9C10

Press Scan to locate your QMD device, then select it in the list to connect.

Your mobile device will then search for and locate the QMD4 unit. It's unique name will begin with 'Qmd4-', it will appear in the white list box to the right of the Scan button. Then press your QMD4 unit's name in the list box.

In a moment your QMD4 software and unit will connect and begin communicating. The green light on your QMD4 unit will begin to blink rapidly when the connection has been established and the software will switch over to the Practice screen.

Tutorial Step 5 - Begin Practicing

After you've established a Bluetooth connection between your QMD4 unit and mobile device you are ready to begin practicing. (**IMPORTANT:** When shooting try to keep the QMD4 unit positioned on the top of your cue stick for the most accurate results.)

Setup a simple drill with only the cue ball on the spot and your mobile device nearby on the table opened on the Practice screen. (**Note:** Details about the Practice screen are provided in the Practice screen section of this guide.)
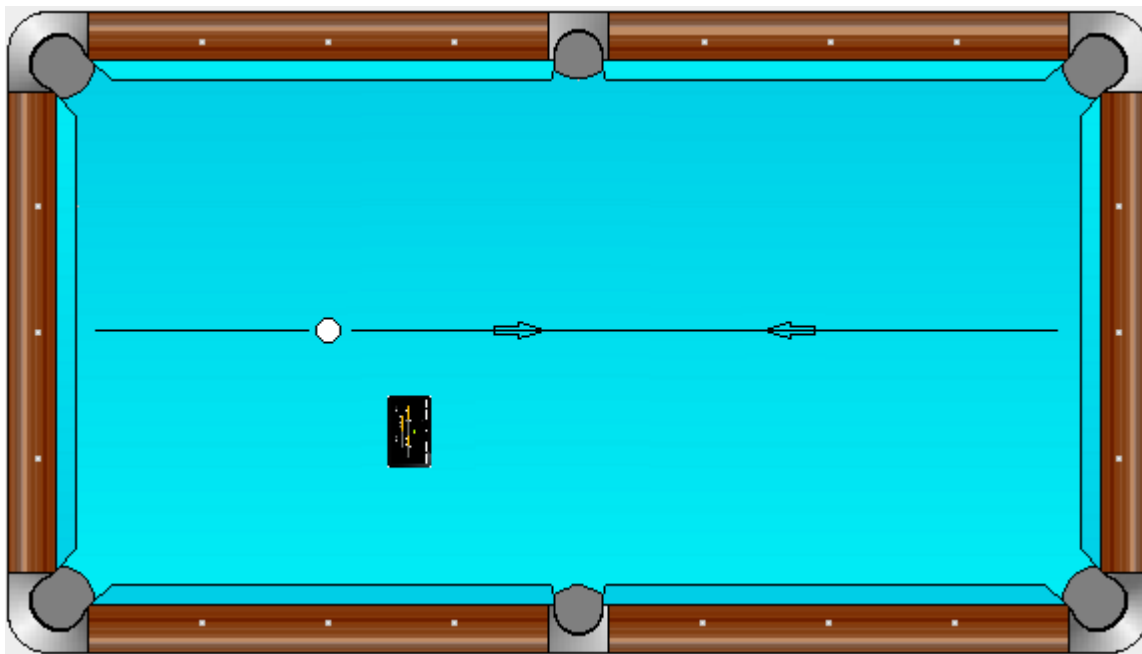
Try to hit the cue ball to the middle of the far rail so it returns back over the spot. Take a couple slow, smooth practice strokes and pause briefly with your tip near the cue ball before your final stroke. During your strokes your mobile device will **beep** when QMD4 detects that the stroke is off-line. When you hit the cue ball on your final stroke your mobile device will **chirp** to indicate that QMD4 has detected and recorded the shot.

Notice that the 'stroke off-line' beeps differ if you're off to the right or off to the left.

With smooth, straight strokes and a light grip you will eliminate the off-line beeps. Pay attention to the points of your practice strokes where you hear a beep and adjust your stroke to stop them.

With a smooth stroke pausing at the cue ball, transitioning smoothly from backstroke to forward stroke and finishing through the cue ball your shot will be detected and recorded with a chirp.

In short, strive to minimize the beeps and be rewarded with a chirp at the finish of each shot. This is how the instant feedback QMD4 provides helps you develop and refine a smooth, straight, properly tempo-ed stroke.

(**Note:** you can avoid extraneous beeping when moving about the table by tilting your cue stick upward, QMD4 will only beep when in a shooting position from about level to about a 45 degree downward tilt).

The last shot you've successfully recorded during your practice (the chirp) will be immediately displayed on the Practice screen. This screen also allows you to see in detail all the recorded shots of your practice session. The animation allows you to see where your stroke may be deviating off line. For a closer look you can even review your shot frame-by-frame using the animation control buttons (<,>,||)and from different views (Top, Side and Back). Double tap the Practice screen to change the view.

Now, with the Practice screen open, take another practice shot. Notice that each new shot is instantly displayed and available for your review. Then swipe the screen sideways (left or right) to display the previous or next recorded shot. Look for any tendencies – are you often pulling off-line to the left in your backstroke, veering right on your forward stroke, and so on? **The Practice screen will help you pinpoint areas to work on to smooth out and straighten your stroke.**

Try another drill. Line up a number of ball across the middle of the table. Place the cue ball on the second diamond lined up for a straight-in shot to a corner pocket. Pocket the ball with a stop shot. Repeat with the remaining balls.
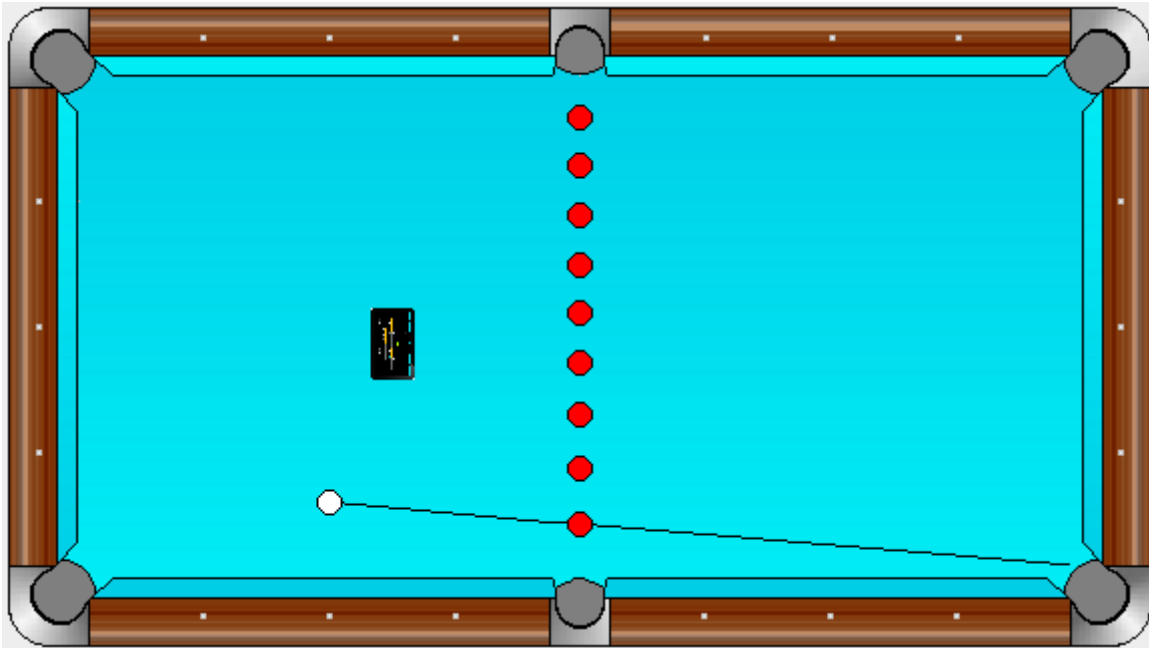
Let the beeps and chirps guide you for smoothing out your strokes. **Remember – use a smooth stroke pausing at the cue ball, transition smoothly from backstroke to forward stroke and finish through the cue ball.**

After pocketing all balls click the **Metrics screen** to see a summary of all the shots in your practice session. Use this screen to see at a glance any unwanted tendencies you should focus on eliminating. The first metric, Lateral Range, shows how far you stroke varied laterally (sideways) during your final stroke and how far it varied at impact with the cue ball. Double tap the screen to change the metric being displayed. Details about each metric is explained on the Metrics Screen section of this guide.

Comprehensive shot metrics to compare shots, identify flaws and tendencies.
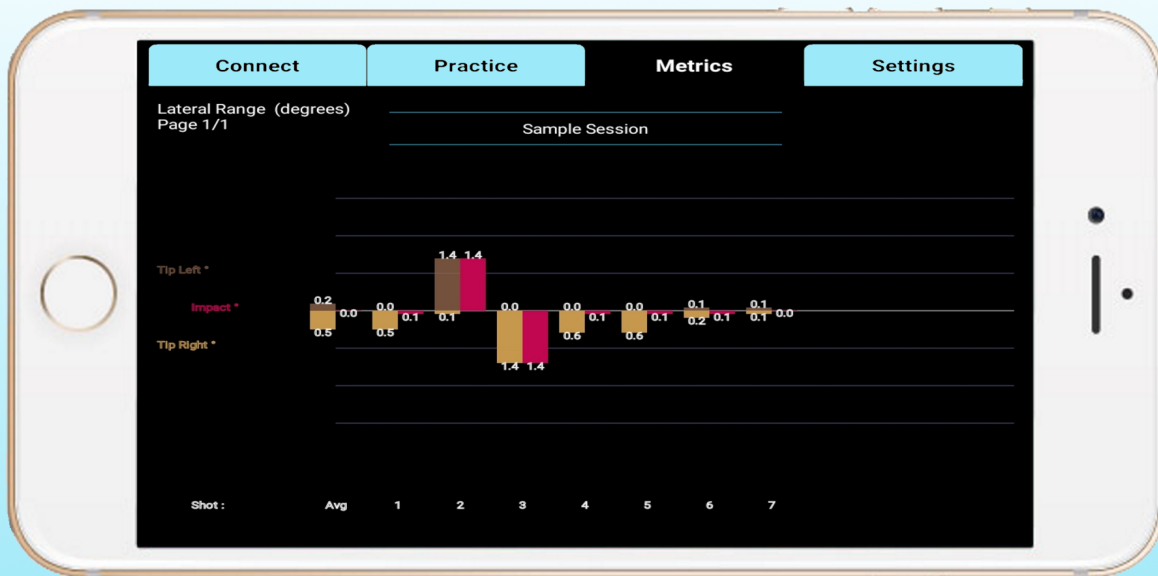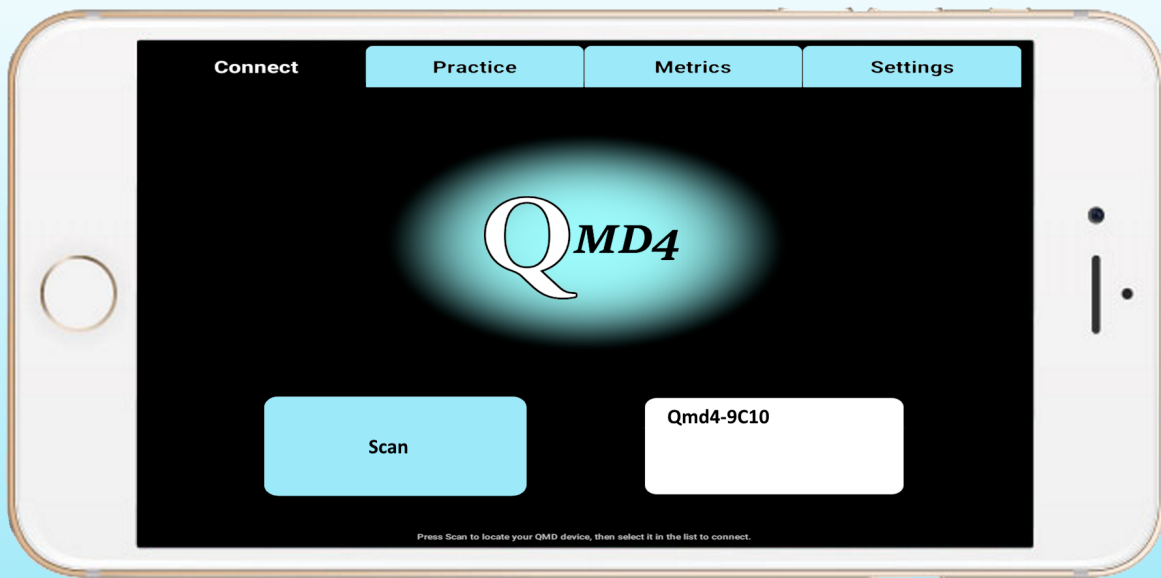
These are just two drills using QMD4 that you can include in your practice sessions, you probably have some more in mind. It may be a good idea to use these drills first to reinforce that feel of a straight, smooth, well-tempoed stroke that will serve you well for the rest of your practice AND for your matches.

The Connect Screen

The **Connect screen** is used to start the Bluetooth connection between your QMD4 unit and your mobile device so you can begin recording your practice sessions.

Easy two touch BlueTooth 4.2 scan and connect.

| Connect | Practice | Metrics | Settings |

QMD4

Scan

Qmd4-9C10

Press Scan to locate your QMD device, then select it in the list to connect.

Your QMD4 unit should be mounted on your cue stick, turned on and its green light blinking for a connection to be started. First, click the **Scan button** to locate your device, it will be shown in the white list box to the right of the Scan button. To complete the connection press your device in the list. In a moment the connection will be completed and the software will automatically switch to the Practice screen.

The Practice Screen

The **Practice** screen allows you to display and analyze in detail the shots you've taken while using QMD4. Each shot is instantly displayed on this screen as you practice. A shot is displayed from the beginning of the backstroke to contact with the cue ball. It is assumed that the backstroke begins with the cue tip at the cue ball and positioned *pointing at the center of the cue* ball.

Shots are saved as the next shot number under the current session name. Shots are permanently saved until you delete them and they all can be viewed whenever you're using the QMD4 software. (**Note:** See the **Settings Screen** section for details about the session name.)

Practice Screen Navigation Tips

o **Swipe the screen left/right to change the shot**

o **Swipe the screen up/down to change the session**

o **The Chart button toggles between the Deviation and Velocity charts**

o **The View button toggles between the Top, Side and Back views**

Instant 3-D shot record/playback with movement chart and cue tip view.
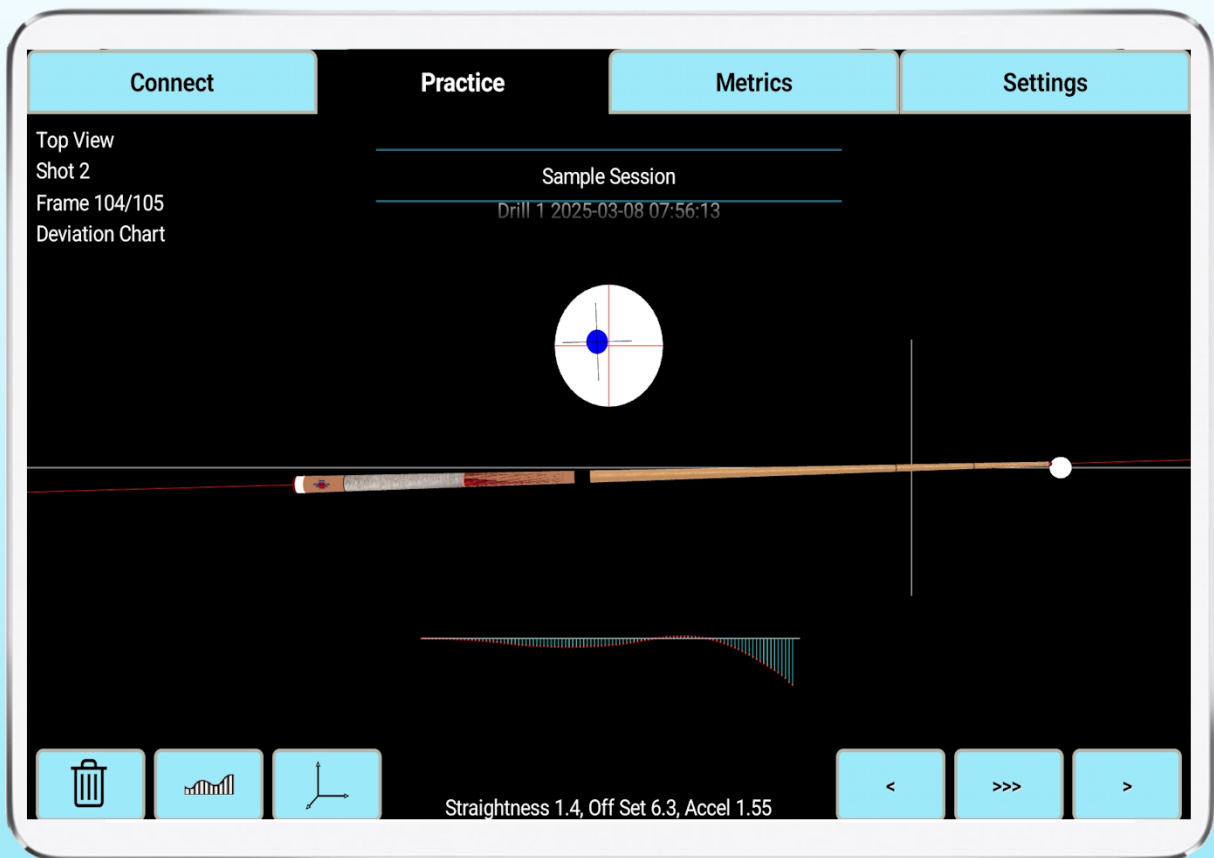
The **Shot** being displayed may be changed by swiping the screen to the left or to the right. The **Session** being displayed may be changed by swiping the screen up or down.

The **Delete button** (🗑) allows you to delete the currently displayed shot or its entire session. Press either Delete Shot or Delete Session to complete the deletion.

The **Chart** being displayed can be changed by tapping the **Chart button** (📊), the chart will toggle between the **Deviation chart** and the **Velocity chart**.

The **View** of the shot being displayed can be changed by tapping the **View button** (⊥), the view toggles from the Top View, Back View and Side View.

The **Animation Control** buttons (<, ||, >) allow you to Play/Pause the shot animation, or move the animation forwards/backwards one frame at a time. Press the appropriate button to control the animation.

The horizontal, white **Center line** in the cue stick animation is set at the beginning of the backstroke. When analyzing your shot you can see the deviations of your cue stick from the center line.

The **Cue Ball View** shows you the position the cue tip is pointing at on the cue ball during your stroke. The tip position is set at the center of the cue ball at the beginning of the backstroke. The red 'cross hairs' on this view allow you to also see the cue stick rotation during your stroke.

The **Deviation chart** on the Practice screen **plots the variation of your cue handle** from a straight line during your entire stroke. The backstroke begins at the left of the chart and ends with cue ball contact on the right. Charts for the Top, Side and Back views are available, views are changed by tapping the View button on the Practice Screen.

On the Top View you would generally want to see little variation, otherwise you are moving your stroke laterally left or right. In this example the cue handle swooped to left on the forward stroke and the cue ball was likely struck to the right of where intended.
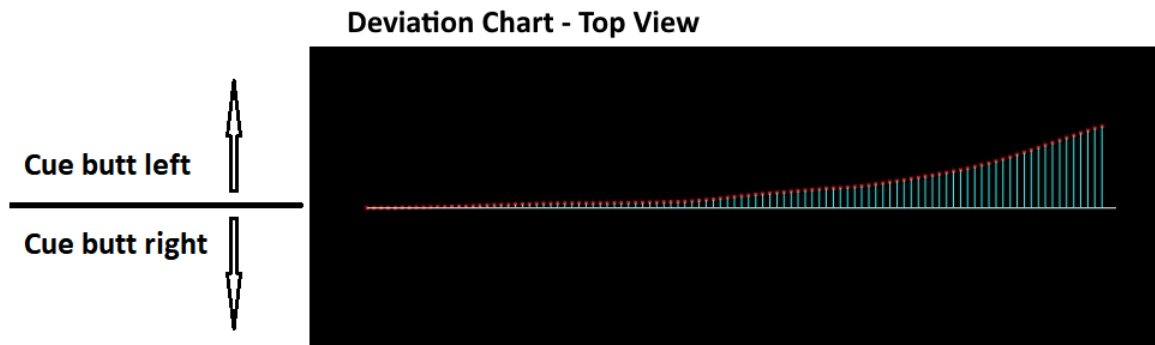

On the Side View you will typically see some variation unless you're using a 'piston' stroke where you try to keep the cue level during the stroke. For a more typical 'pendulum' stroke the cue rises up smoothly on the back stroke and returns to level on contact with the cue ball. A variation of the cue butt downward may be an indication of 'elbow drop', which generally should be avoided.
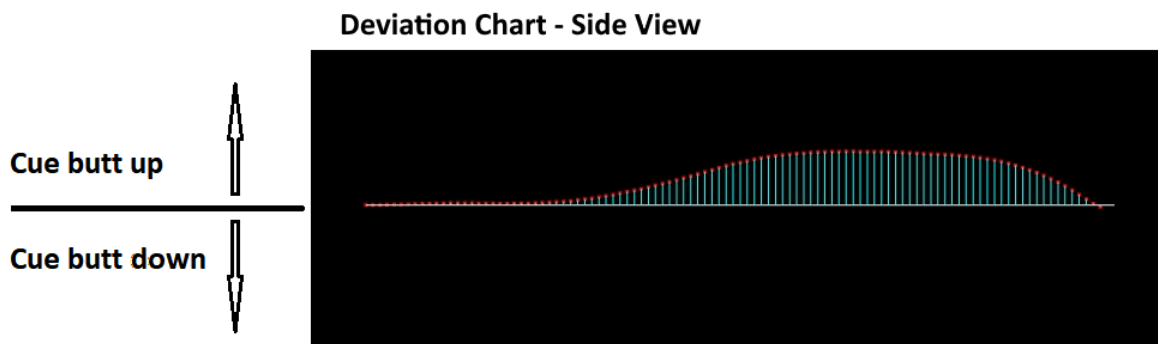
The Back View plots the rotation (or twist) of the cue during your stroke. Excessive rotation should be avoided though there are differing opinions on if some twist is good or bad. As with most aspects of your stroke, consistency is important.

Deviation Chart - Back View

Rotate Left

Rotate Right
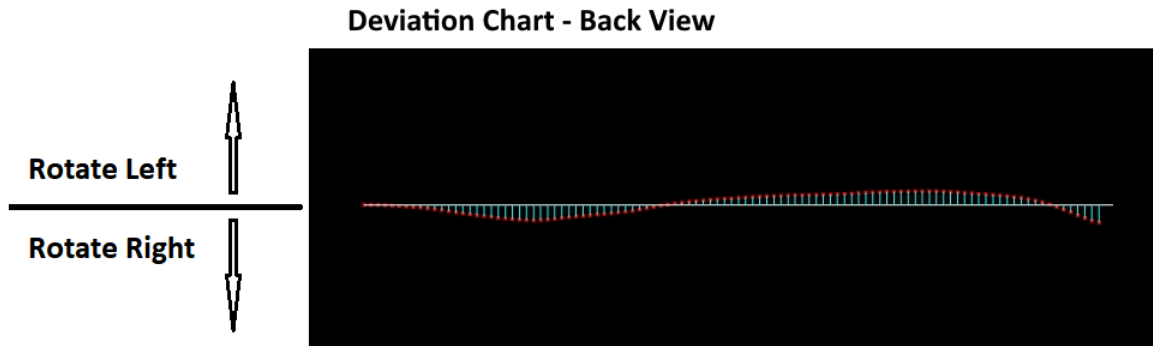
The **Velocity chart** on the Practice screen shows you the relative velocity of your cue stick throughout your stroke. The velocity is set at zero at the start of the backstroke.

Velocity Chart

Start Backstroke

Contact with Cueball

End Backstroke

Start Forward Stroke
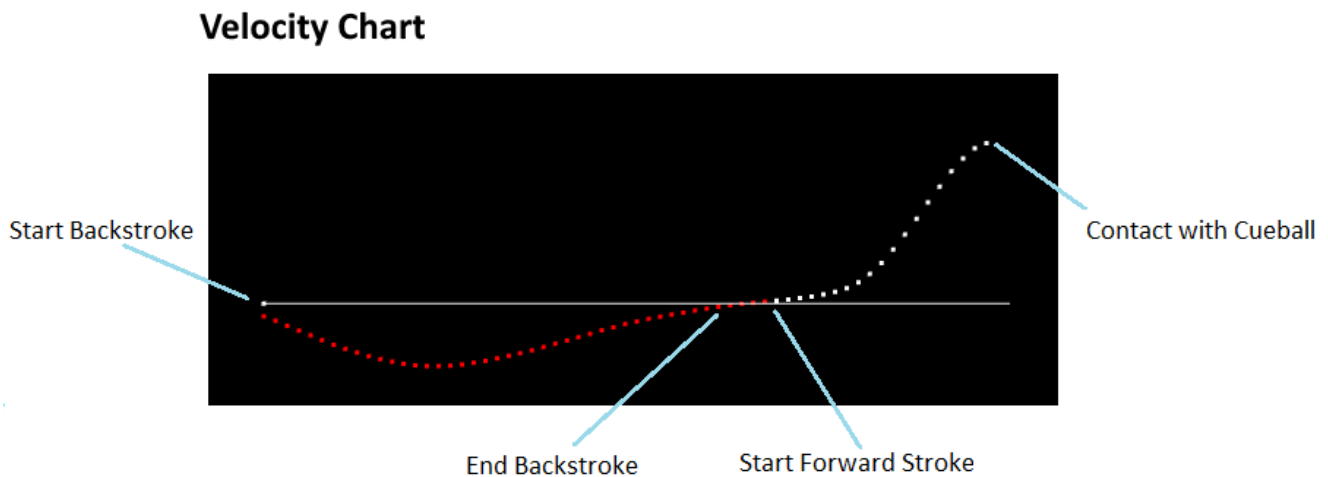
Note that in this sample shot the velocity is negative (moving backward) during the back stroke, motionless during the pause between the end of the backstroke and start of the forward stroke, and positive (moving forward) after the start of the forward stroke. The velocity is increasing up to contact with the cue ball indicating acceleration 'through the cue ball'.

Some additional information about the displayed shot is also shown along the bottom of the screen. This includes the Straightness, Off Set and the Acceleration Index of the shot (see the Metrics section for explanation of these terms)
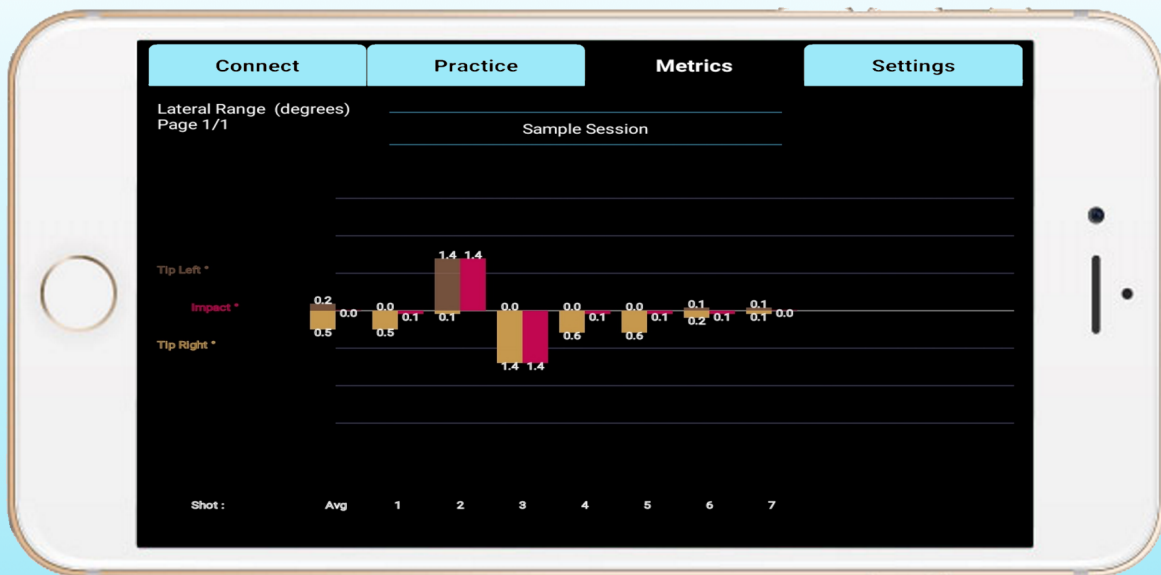
The Metrics Screen

The Metrics list allows you to see at a glance all the key metrics for your practice sessions. This screen makes it easy to identify any unwanted tendencies you should focus on eliminating and to see your progress in improvement from session to session.

Screen Navigation Tips

o **Double tap the screen to change the metrics**

o **Swipe the screen left/right to change the page**

o **Swipe the screen up/down to change the session**

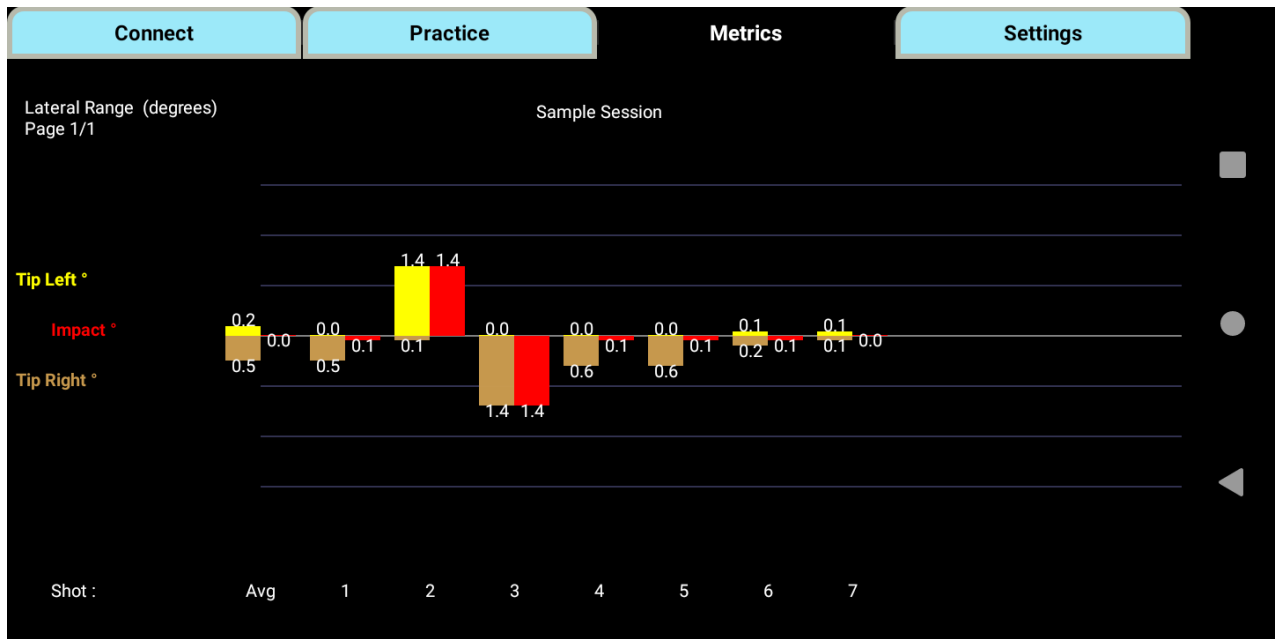Comprehensive shot metrics to compare shots, identify flaws and tendencies.

The **Metric** being displayed can be changed by double tapping the screen, the available metrics are Lateral Range, Vertical Range, Roll Range, Stroke Tempo and Acceleration Index. The **Page** (if more than 10 shots exist in the Session) being displayed may be changed by swiping the screen to the left or to the right. The **Session** being displayed may be changed by swiping the screen up or down.

The **Impact Distribution Metric** (below) shows your cue tip position when it hit the cue ball.   **It is assumed your cue tip was pointing at the center of the cue ball at the start of your stroke,** the deviations from this starting point are shown. In this example there were seven shots in the session being displayed. The first shot deviated 0.7 mm from the center of the cue ball and the average deviation for the seven shots in this session is 3.7 mm.

Impact Distribution (mm)
Page 1/1

Sample Session

| Off Set (mm):	3.7	0.7	8.0	7.1	6.5	2.8	1.1	0.0
Shot :	Avg	1	2	3	4	5	6	7
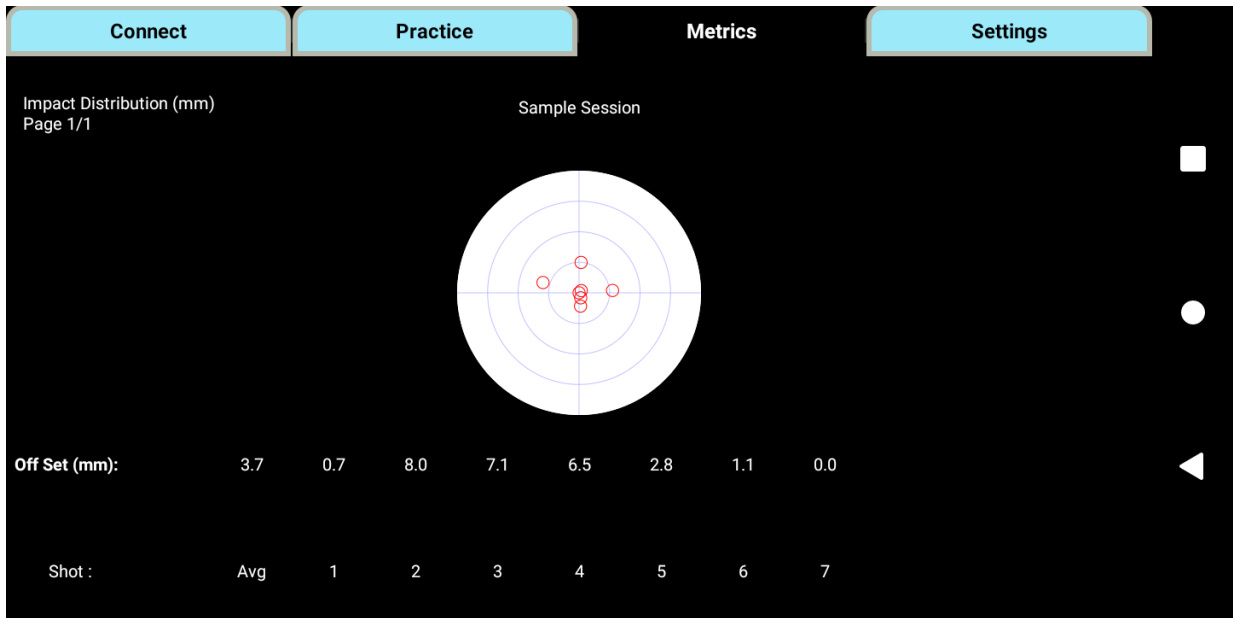
The **Lateral Range Metric** (below) shows how far your cue tip deviated (in degrees) to the right or left during your stroke, and it's final deviation at impact with the cue ball. In this example there were seven shots in the session being displayed. The first shot deviated 0.0 degrees to the left, 0.5 degrees to the right and 0.1 degrees to the right at impact. The average for the session is also shown, here it is 0.2 left, 0.5 right and 0.0 at impact.

Connect   Practice   Metrics   Settings

Lateral Range (degrees)
Page 1/1

Sample Session

Tip Left °

Impact °

Tip Right °

Shot :	Avg	1	2	3	4	5	6	7

Tip Left values: 0.2, 0.0, 1.4, 0.0, 0.0, 0.0, 0.1, 0.1
Impact values: 0.0, 0.1, 1.4, 0.1, 0.1, 0.1, 0.2, 0.1, 0.0
Tip Right values: 0.5, 0.5, 1.4, 1.4, 0.6, 0.6

The **Vertical Range Metric** (below) shows how far your cue tip deviated (in degrees) up or down during your stroke, and it's final deviation at impact with the cue ball. In this example the first shot deviated 0.1 degrees high, 0.5 degrees low and 0.1 degrees to the right at impact. The average for the session is also shown, here it is 0.3 high, 0.7 low and 0.1 high at impact.
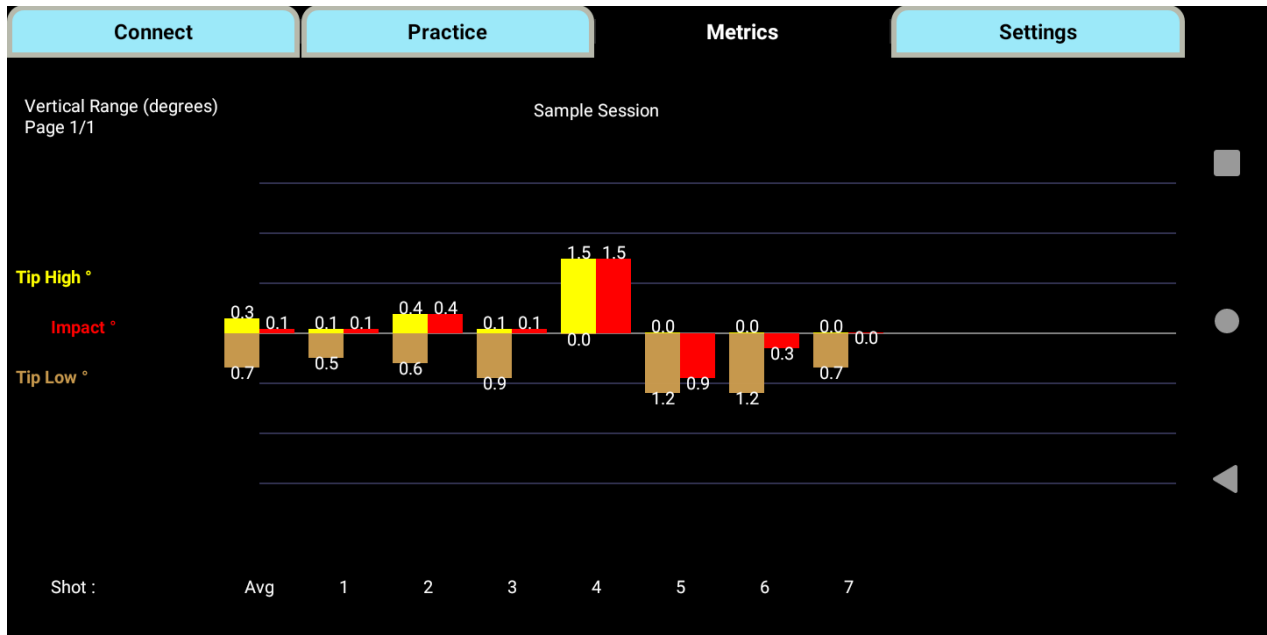
The **Roll Range Metric** (below) shows how far your cue rolled (in degrees) left or right during your stroke, and it's final deviation at impact with the cue ball. In this example the first shot deviated 4.2 degrees left, 0.4 degrees right and 0.3 degrees left at impact. The average for the session is also shown, here it is 2.9 left, 1.4 right and 0.1 right at impact.
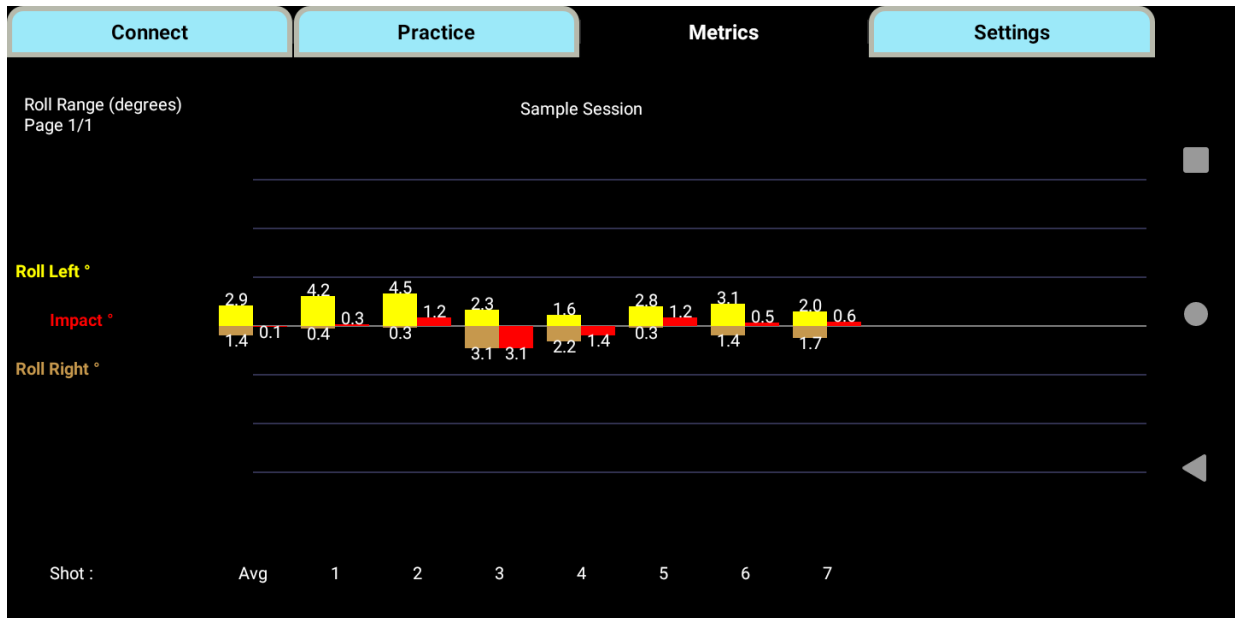
The **Stroke Tempo Metric** (below) shows tempo of your stroke in seconds. In this example the first shot spent 0.44 seconds for the back stroke, 0.21 seconds for the forward stroke and 0.23 in the pause between forward and back stroke. The average for the session is also shown, here it is 0.48 seconds for the back stroke, 0.17 seconds for the forward stroke and 0.26 in the pause.
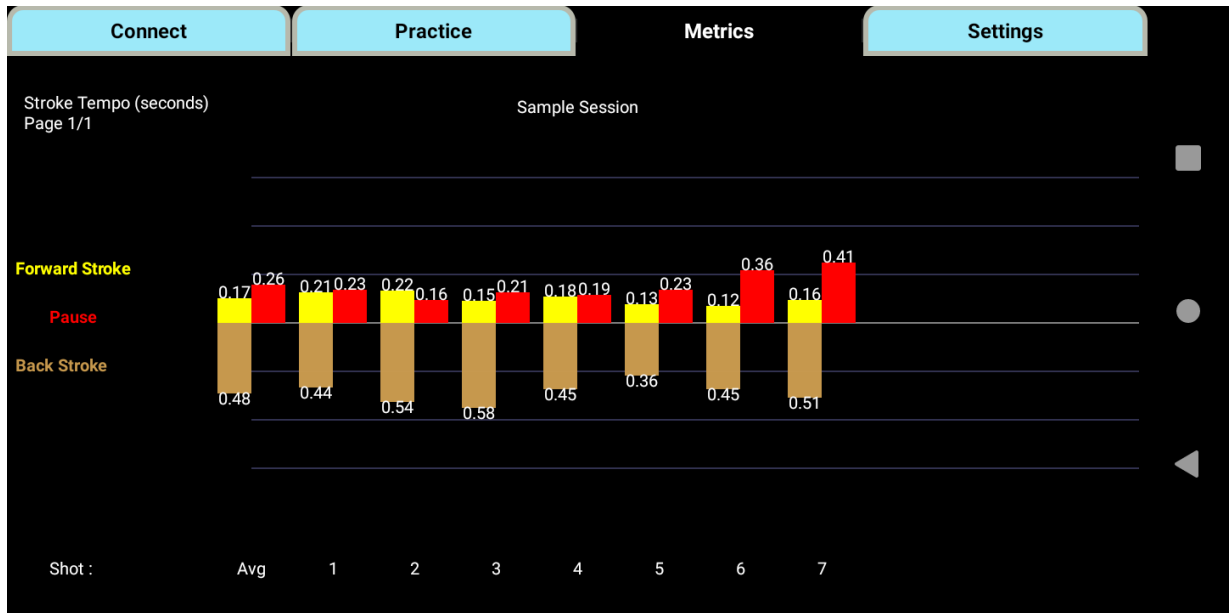
The **Acceleration Index Metric** (below) shows the relative acceleration (or deceleration) of your stroke as you're impacting the cue ball. In this example the first shot's acceleration index is 1.5, the average for the session is 3.06.
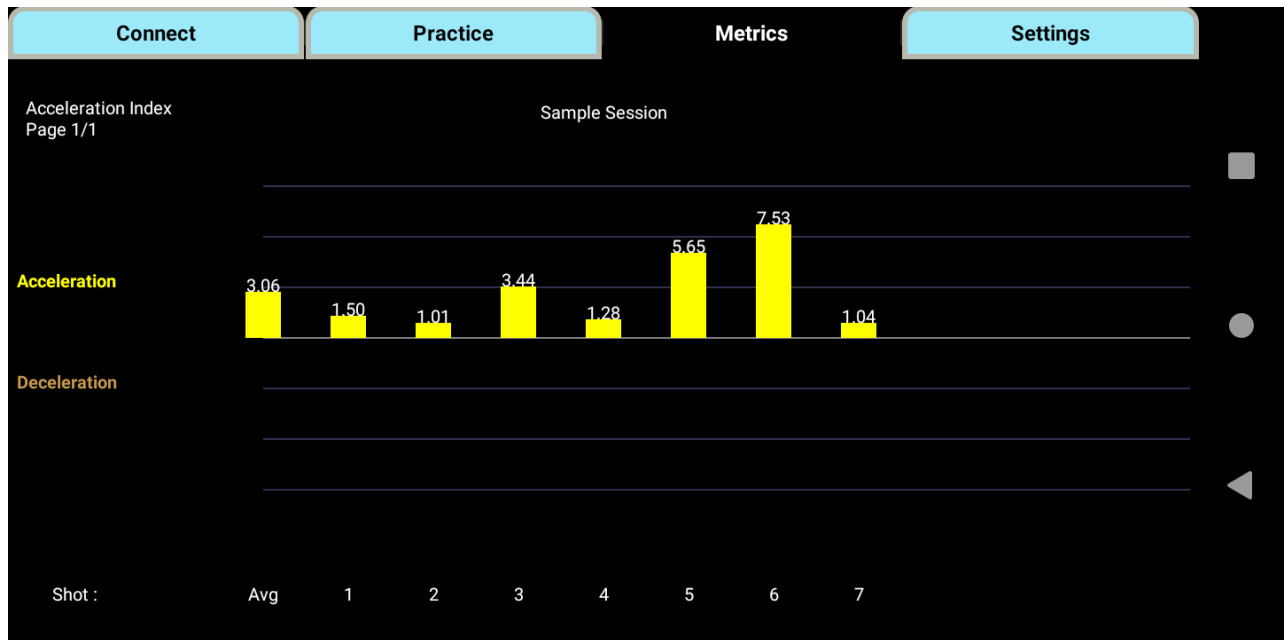
The Settings Screen

The Settings screen allows you to customize the behavior of the QMD4 software.

Fully customizable settings to fit the way you shoot.
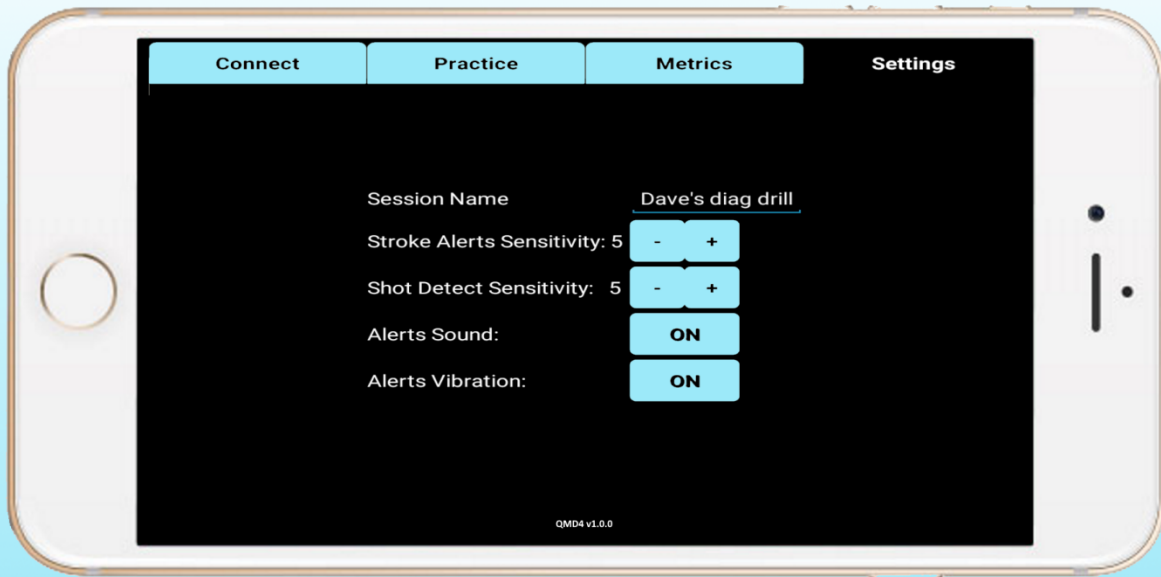
The **Session Name** text area allows you organize your practice shots into sessions, such as 'Tom Drill1', 'Tom Drill2', 'Force Follow', 'Long Diagonal', etc. Touch the text area of the Session Name and enter the new session name you'd like, then use enter/return/done on the keypad to dismiss it and save the new session name. All the practice shots you then take will be recorded and saved under this new session name. The session name is also suffixed by the current date and time.

The **Stroke Alerts Sensitivity** setting lets you control the real-time audible alerts feature of QMD4. While you are practice stroking your mobile device will alert you (with a tone) if your pool cue is moving off-line in excess of the sensitivity you've set. This audible alert is made instantly (within milliseconds) of the off-line movement. The instant feedback helps you hone your stroke and provides you with the proper 'feel' of a straight pool stroke. A lower setting will be less sensitive, a higher setting will be more sensitive.

The default sensitivity setting of 5 is a good place to start. Higher settings will make it more challenging to 'keep QMD4 quiet', lower settings will make it easier.

The **Shot Detect Sensitivity** is used to control how sensitive your QMD4 unit will be for detecting and recording shots. At times abrupt movements of your cue will fool QMD4 into thinking a shot has occurred. A lower sensitivity setting will avoid recording of 'phantom' shots, however with a low setting very soft shots may sometimes be missed. Choose the shot sensitivity setting to best fit the way you shoot, the default setting of 5 is a good starting point.

Alerts Sound and **Alerts Vibration** may be turned on or off. For instance you may want to turn off the sound for the stroke alerts and put your phone in your pocket to only feel the vibration.

Operating/Charging your QMD4 unit

Shown here are the parts of the QMD4 unit and charging instructions.

Charging Port

Cue Tip

Red Charging Light
Green Bluetooth Light
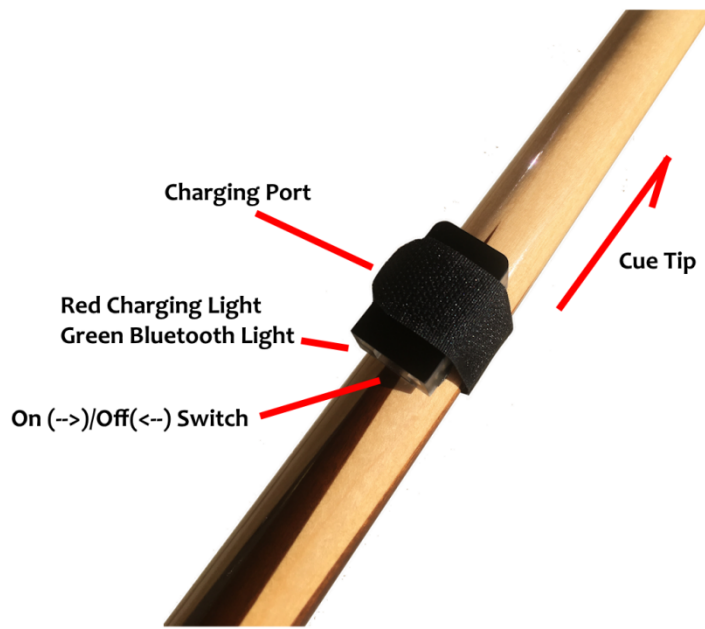
On (-->)/Off(<--) Switch

Slide the On/Off switch to the **right to power** on your unit, to the **left to turn it off**.

A slowly blinking green Bluetooth status LED will appear when your unit is first powered on. This indicates that unit is ready for a Bluetooth connection. It will be replaced with a flickering green Bluetooth status LED when a Bluetooth connection is established.

Your unit unit will begin performing erratically if used with a low battery. Be sure to recharge your unit regularly before beginning a practice session.

The USB charging port is used for charging your unit's internal LIPO battery. Connect with a powered USB port using a standard USB Micro-B cable for charging your unit. **The On/Off switch MUST be in the off position (slid left) when charging.** When plugged into a USB port for charging (the on/off switch MUST be off) the red charging indicator LED will appear, it goes out when the charge is completed. Your unit will operate for approximately two hours with a fully charged battery. The battery will recharge in about two hours.   As with all rechargeable batteries, operating time slowly degrades with age and usage. Charging your unit once a month even when not in use will extend the battery life. Take care not to leave your unit in the on position, fully discharging the battery greatly reduces it's useful life.