Ketty PhDee

PART 1: Welcome, Forkers!

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Welcome to kettie shooting, the lowest entry-level shooting sport that can be enjoyed by young and old in a family quality time context at social and recreational events ranging from very basic and practical skills to exceptionally sophisticated equipment and techniques. There is something for everyone! You are invited to become a Forker!

In this series, we will explore the profound technicalities of kettie shooting or "slingshot", as it is called internationally, especially in the Americas. In Europe, it is known as "catapult", in Ireland, it has the peculiar name of "katty", and in South Africa, it is fondly known and instantly recognisable in all 11 official languages as "kettie". If you are in doubt about the weapon, it is a V-forked, Y-handle device with a pouch to seat the projectile and elastic bands for propulsion. The term "slingshot" does not refer to the direct Afrikaans translation *slingervel* (the weapon used by David against Goliath in the Bible).

This series reflects the South African congenital context and realities of slingshot shooting, the practical limitations like weak currency and international market access (products), and, of course, the freedom, such as no statutory limitation of the display and use of ketties. Thank you to the brave souls like KETTY (Pty) Ltd and outdoor and sporting goods retailers who venture into commercial interests to bring us quality products. Of course, we also give due recognition to organisations like the South African Slingshot Federation (SASF), which provides resolute structures and rules for excellence, the clubs, supporters, enthusiasts and the Forkers (kettie shooters/athletes). Naturally, official event sponsors like Natshoot Young Guns Kettie Series and the cultural custodians of kettie in South Africa, Die Voortrekkers, also deserve a mention. We are truly blessed to have them all.

Although the art, culture and tradition of the kettie are deeply rooted in South African history and immortalised by curators like Die Voortrekkers as their official sport, the sad truth is that this traditional craft has faded. Fortunately, evolution has fashioned new, innovative products, leading to novel shooting techniques based on extraordinary performance ca-

pabilities and giving way to inspired modern, state-of-the-art technical doctrines. The realm of kettie shooting is a brave new world! Simply put, times are changing – ketties are no longer cut from tree branches but rather made from modern materials. The crafting of unique custom (*pasmaak*) slingshots in itself is a great hobby and a commercial industry.

Before we start our deep dive into the technical intricacies of the kettie shooting matrix, let's look at the basic slingshot requirements for SASF events. Since I know you do not have the patience to wait until the end of this series but are probably already surfing the web, shopping for a slingshot frame before you have finished reading this paragraph, I need to give you some advice. Before buying your kettie, take note of the following important aspects as determined by SASF rules:

- The kettie frame (and fixed accessories) may not exceed ("should fit into") a 200 mm square.
- The kettie may not have an arm brace or support, only a lanyard cord.
- The kettie pouch may not have moulded (recessed/sculpted) pellet seating impressions; no limitations on size or materials like leather, natural or artificial fibres; usually 45-55 mm long, 1,5-2 mm thick, in a variety of designs.
- The kettie may not have a laser sight or an edged magnification lens, but mechanical and fibre-optic-enhanced sights are fine.
- There are no limitations on weight (mass), the materials of the kettie frame, or combinations, e.g. wood, polymers (plastics), resins, carbon, metals and alloys like stainless steel, aluminium, titanium, etc.
- There are no limitations on elastic bands but note that "flat bands" from 4,5-0,6 mm are preferable for precision shooting.
- There are no limitations on the draw length (the pull length/strength of the bands); short draw (most prevalent in SA), semi-butterfly and butterfly (long draw) are permitted, but with no mechanical trigger release.
- There are no limitations on band affixing with tape, stretch bands (Amber Belt), clips and hinges for TTF (through the forks), and the most predominant, OTT (over the top), is allowed.
- There are no limitations on shooting style, kettie orientation – 180º (upright/classic), 45º or 90º (gangster style), or the grip, hammer, pinch thumb, etc.
- SAFS "ammo" (pellets). Standardisation: # 8 mm steel (indoor competition), # 8-10 mm "safety pellets". Eco-friendly, magnetic clay, water-soluble for outdoor/field target.
- Safety glasses are required on the range. It is a VERY GOOD idea to use safety glasses by default whenever shooting a kettie.

Of course, you knew all this stuff off the cuff – easy enough, right? After all, you just want to shoot kettie. But if you really want to be good at it, there is a LOT more to it, hence this series!

What to buy right now

A kettie is as random and unique as any sports equipment. I suggest a good GUS (general utility slingshot) kettie; you can't have enough of them. Technical specs:

- "pinch-grip" frame
- OTT
- a fork (or "bow" in some countries) width of 80-90 mm, measured from the outside corners.
- a fork equipped with a "clips" system (to attach the bands)
- natural latex (sling-shot-specific) flat bands
- a generous, larger pouch with a plain design. Reasonable quality and durability are important for safety.

Do not buy a kettie with "tubes" for this purpose, but only ketties equipped with "flat bands". The flat bands are usually latex-based. Make sure you buy elastic band products intended for kettie shooting; products for other purposes, like physical exercise, will not work. A few great brands are available worldwide, including the top South African brand, Ketty Elite Pro. The Ketty Elite Pro products are all custom-made by hand and specifically designed for kettie sport shooting. These ketties are available in 0,45 mm (Yello) for novices/children, 0,50 mm and 0,55 mm for adults, and 0,60 mm for field target.

I always find it astounding that people will spend a fortune on a kettie frame but shoot cheap junk ammo! Get proper ammo (pellets) such as the following:

Option 1: so-called safety/field target clay balls (pellets) in size 8 mm+ > 9 mm. There are a variety of options on offer – from terracotta (too small, too light) to actual real kettie ammo such as the "Field Target" in yellow and black from the Ketty brand; the magnetic, eco-friendly, water-soluble range is of excellent quality. The magnetic clay pellets are easy to pick up and recover with a magnet on a string.

Option 2: 8 mm steel balls (so-called "ball bearings"). These are great for repetitive use and are the official competition ammo size in SA – a must-have for standard discipline practice. Carbon steel is best; do not buy anything coated or plated. Lead balls are not permitted, as they are poisonous to you and the environment. Good ammo is important and critical for precision and accuracy matrix (PAM) results. Poor ammo discouraging because of poor results and reinforces bad shooting habits!

OTT (Over The Top) – style 90° (gangsta), Pinch Grip

This basic GUS all-round (utility) kettie set-up will get you going and serve as a point of reference for working through the "Ketty PhDee" series. Remember, as long as it is a durable frame, you cannot have enough kettie frames. Note: Dedicated (to a purpose) or so-called specialised kettie frames could be very unfamiliar and challenging to get comfortable with for shooting. Features and options such as adjustable forks etc are sometimes very intriguing but also misleading as to the actual function and purpose. Buy from a reputable dealer, your local sports dealer or *www.ketty.co.za* (Kettie Shack near you). It is better to start shooting today and gain experience than to wait for the perfect equipment.

The objectives of this series

The aim is to get you, the athlete – equipped with the (a) core knowledge (technical understanding) and (b) critical equipment – to the 10 m standard discipline shooting-range line, open and ready for an expedient (c) elective knowledge learning curve (self-discovery) to be a competitive athlete. In other words, this series will guide you on a technical, generic path to success and self-discovery (unique style) as a kettie athlete.

How is the "Ketty PhDee" series going to equip you?

We already stated that this series is a practical guide to kettie sport shooting within the South African context. It is not a series on general ketty fun shooting or hunting, etc, though some fundamental elements hold true. To control the mechanical workings (cause and effect) of your kettie, you need to understand the precision and accuracy matrix (PAM) theory and identify the elements (metrics) in the PAM and its interdependency effects. Precision is internal ballistics (call it "inherent precision potential") and accuracy is putting that precision on target.

There are many implausible challenges and conundrums in "kettie tech" to be explored and resolved. The best inconceivable enigma example: (1) Why is OTT more accurate but offers less precision versus TTF (more precision but less accurate)? What are the metrics involved and the scientific measurable (calculable) difference that gives TTF better statistical precision? (2) But, if so, why (contradictory to the "scientific doctrine") do most (novice?) average athletes find initial target engagements (accuracy) much easier than with TTF?

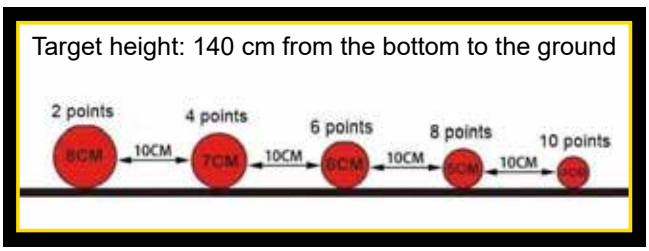
To measure is to know

"*Meet is weet*". Therefore, we want scientific evidence and statistics for effective and decisive decision-making. Assumption implies complacency. We do many things based on traditions, customs and conventions that seem to work, but we rarely go to the trouble to understand the science behind it. If you want to improve anything, you must understand it

fundamentally to make decisive decisions for improvement. For example, do not assume the speed of your projectile. Measure it accurately, as it has a huge influence on many aspects and decisions regarding optimisation. We need to understand that everything has a fundamental, technical truth or ideal state. The further we deviate from the ideal state, the more inconsistency we introduce and the worse the optimum performance curve becomes in terms of repeatability etc. We put in a lot of effort and call it "practice" with the aim of eliminating deviation and ensuring consistency. From a scientific perspective, the aim is to minimise and eliminate induced discrepancy, which is inevitable with any human interaction. There is a perfect or ideal equipment set-up, but not your preference; similarly, an ideal, flawless shooting style, but it does not suit you and the more you personalise it, the harder you must work at it to maintain that form or style. Nonetheless, you must set up and practise to the point where your kettie sport shooting is entirely inherent.

Competitive athlete's perspective

Let's understand the objectives. We are working towards a kettie sport-shooting athlete: You must be able to "knock down" steel targets at distances of 10 m, 15 m and 20 m reasonably consistently to be competitive. To understand the requirement of engaging the various targets at said distances and varied sizes, let's appreciate the typical match play scenario.



Kettie match shooting – match play

SASF National League has three SASF standard (sports code) indoor disciplines but only one standard target set consisting of two rows of round targets with five targets each (top and bottom are the same), ranging in size from 8 cm to 4 cm. These targets are placed in front of the shooting range (indoor hall), each demarcating a range from 1 to 10 at a height of 1,4 m, and the shooting positions (stations) are placed and moved for distances of 10 m to 15 m and 20 m disciplines after the match squad completed the rotation. The match duration is 5 minutes and 10 shots, with no specific sequence (order) in which the targets must be eliminated (knocked down). Each target has a unique score value of 8 cm (2 points) to the smallest of 4 cm (10 points), keeping the match play interesting. Each discipline (distance) is shot twice in the athlete squad rotational format. SASF National League classes: u/13 y (10/15 m), u/16, u/21, Open, Masters 50-60, Veterans 60+ and unisex (no distinction between sexes).

In South Africa, the SAFS Junior Series is facilitated by "Die Voortrekkers Kettie Series", Natshoot Young Guns Kettie Series, The Ketty Series (primary schools), *GAME & HUNT* magazine (Family) Series, all accommodating the novice Forker members (8-12 years old) at 5-10 m distance, but does not form part of the SASF national league – rankings for SA National Colours.

It is important to note that at a kettie tournament in South Africa, each discipline (10 m distance) and the related classes (u/13) are separate medals competition events. Therefore, you may, for example, specialise in 10 m and only enter 10 m events and be the SA 10 m champion. The format is very accommodating – you may have a handicap, such as a visual or physical impairment, preventing you from drawing for disciplines at longer distances, or you simply enjoy the simplicity of the event.

Considerations

If you analyse the above (fit-for-) purpose, it is clear that the requirements are determined by the objectives to accomplish the goals, to be a participant, a contender or a champion. The rule is clear: "Knock down" the target – do not hit or chip at it. Thus, your equipment and technique must be fit for purpose. You want to shoot a flat trajectory, but that requires higher speed. However, to achieve precision, you need as little strain (pull strength) and shudder/tremble as possible, but it needs to be a trade-off between this and generating enough energy to knock down targets at a distance. Ideally, you want a heavy-framed kettie for stability, but that weight is a handicap when you are fatigued in a day-long event. This does not begin to address the scientific and technical advantages of the actual equipment and shooting styles. In this series, I will endeavour to address this and advise you accordingly.

Match play strategy

People do not plan to fail – they fail to plan. Every organised sports (code) discipline – from tennis, swimming, football, rugby and darts to ring ball – has set match play strategies and creative plans (tactics) to outwit the opponents. This is usually based on "using your disadvantages to your advantage". This inevitably implies that you need to understand your capabilities and hone your skill set accordingly. Interestingly, it seems that technology (equipment) will give you a shorter development time for accuracy, and the scientific knowledge will ensure the top-end precision performance you need for podium positions. However, the bulk of the success, and thus the work to be a contender, resides in experience. Exercise and practise smartly to meet specific goals. Just shooting kettie is like just playing "ball" aimlessly for entertainment. Which "ball" (football?), what rules and what measure of performance, etc?

Thank you for joining me on this "Ketty PhDee" series journey as we explore the science and legends, debunk the myths and cultivate solutions to precision kettie shooting. Till next time, safe shooting!