

**Spin to Win: Rotational Shot Put Skills and Drills**  
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**Introduction**

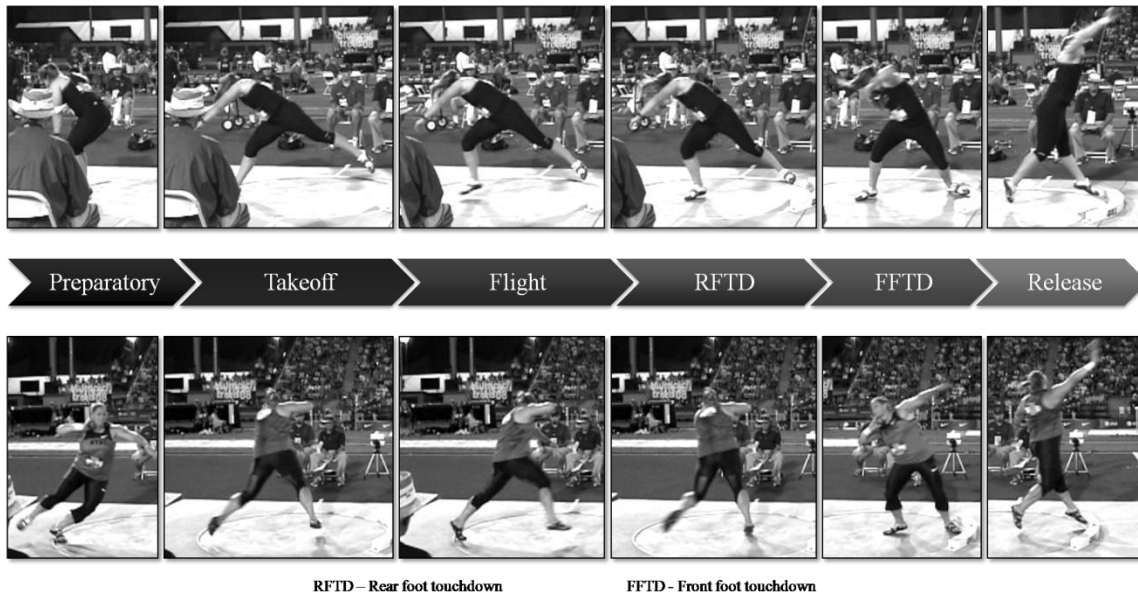
The shot put is one of the most fundamental events in athletics. Thrown in competition for many decades, the shot is a test of power, speed, and skill. To be successful in the shot put the athlete must combine strength, speed and an efficient technical pattern. The event has seen many variations in technique, originating with a side facing style, which was eventually driven into oblivion by the conventional O'Brien style of putting that starts the movement with the back facing the throw. Then, in the mid 1970's, the event was revolutionized by using the discus spin with the 16-pound shot with athletes throwing over 70 feet.

Should I glide or should I spin? This issue is at the forefront of present-day coaching. Coaches face the challenge of producing results in the shot put with a very short time for preparation. To get optimal performances in a short period of time, coaches must come up with a technique that will bring results fast. Traditionally, athletes were taught the standing throw and then taught to glide. This was traditionally thought to be the most effective way to get results. Coaches have shied away from the rotational technique (spin) because of its highly technical nature. But, now more than ever, women and men alike are questioning the glide

There are several advantages of the rotational technique in the shot put, as compared to the O'Brien technique. Advantages of the rotational technique include 1) the ability of the athlete to generate more horizontal velocity, 2) the shot is carried through a longer distance that allows a longer period to apply force, and 3) throwers of modest strength and body weight can achieve results. However, without the right coaching, the spin also has many disadvantages. Disadvantages of the spin include 1) the generation of excessive horizontal velocity that puts the thrower in a weak, out of balance power position, 2) an ineffective position for applying force, and 3) the difficulty in quickly grounding the front foot causing the shot to be released to the right of center, which negates the advantageous long application of force and increased horizontal velocity. 4) Centrifical force also presents a problem for the rotational shot putter. As the athlete increases the speed of the turns during the throw, it becomes much harder for the athlete to hold the shot to the neck, which is critical to the ending momentum placed on the shot. 5) Balance is also essential in increasing the velocity of the turn, but it is more difficult to maintain than in the conventional O'Brien technique. But with good coaching these disadvantages can be easily corrected. Considering the advantages and the disadvantages of the rotational shot put, the coach must decide which technique is best suited to the talents of the athletes he is working with.

Is there a specific body type that is better suited for the rotational technique as opposed to the glide? The answer is, probably not. Athletes of all sizes have been successful with the rotational technique as well as the glide. Generally, shorter or weaker athletes that are unsuccessful with the glide may be successful spinners, because the

rotational technique requires less core strength than the glide. But, a spinner must possess a certain temperament to handle the fineness of the technique.



## Glide vs Spin

### Session Overview

- Introduction
- Historical background
- Mechanical factors
- Technical aspects
- Teaching Progression
- Summary Points

### Introduction

- Inventory of group's experience
- List significant events or contributors to RSP.
- List advantages and disadvantages of RSP.
- List commonalities between RSP and GSP.
- List key aspects of RSP technique.
- List common faults among RSP athletes.

### Analysis of Technique

#### Mechanical Factors

- Rotary Momentum
- Linear Displacement
- Linear Momentum
- Transfer of Momentum

## ■Summation of Forces

### Factors

- Posture
- Balance
- Kinesthetic awareness
- Coordination
- Axis
- Rhythm

### *To spin or not to spin...*

### Potential Advantages

- Increased range over which the shot can be accelerated (Bosen 1984)
- The longer path enables the athlete to generate force over a greater period of time
- Glide path equals 9'8"
- Rotational path equals 14'0"
- This increased application of force enables the athlete to produce superior release velocities
- Also results in superior leg lift at delivery
- Glide enables 4-6' lift, Rotational enables 10-12'

### Advantages

- Rotational throwers covered a range of 3.10m in the initial turn (Bosen (1984)
- With a corresponding velocity of up to 4.0m per second
- Glide throwers covered a distance of 100 cm during the same phase
- With a corresponding velocity of 2.75m per second

### Advantages

- Enables the athlete to obtain a more favorable position from which to begin the final putting action
- Better rhythmic qualities facilitate the generation of greater torque, and the storage of more kinetic energy from the preceding actions

### Advantages

- Anecdotal examples
- Opens the event to athletes of modest strength and size?
- Places less stress on the body?
- Compliments training for the discus event?

### Potential Disadvantages

- The generation of excessive horizontal velocity can put the athlete into a weak, off-balanced power position
- In-efficient for the application of force
- The difficulty in grounding the front foot may cause the shot to be released right of center

- This can force throws to go right or left, consequently compromising distance by dispersing forces
- Also may increase number of fouled attempts with new sector rules

#### Disadvantages

- Anecdotal examples
- Time considerations for development
- It takes more time to establish this technique
- Inconsistency in major competitions
- Spinners are not “technically sound,” therefore “un-reliable” in big meets

#### “The Bottom Line”

- The coach must decide which style is best suited for each individual on their team
- Athletes of all sizes have been successful with both techniques
- With good coaching, these disadvantages can be easily corrected and the advantages can be consistently attained

#### Technical Aspects

- Wind-up Phase (Double Support)
- Entry Phase (Single Support)
- Drive Phase (Non-Support)
- Transition Phase (Single Support)
- Delivery Phase (Double Support)
- Recovery Phase (Support varies)

#### Wind-up Phase

- Stance at the rear of the ring
- Feet shoulder width apart, straddling center line
- Shoulders and hips are facing 12 o'clock
- Body is upright
- Variations in posture and knee bend exist
- Eyes focused on the horizon

#### Wind-up.

- Moderate torso rotation
- Right shoulder rotates back to a comfortable position, approximately ¼ turn to the right
- Shoulders kept level, up/down movements avoided
- Left foot and arm are locked together in the same direction
- Elbow is placed above and slightly inside the knee
- Right foot kept flat on the circle, left foot pivots
- Left knee rotates inward towards the right leg (hips and weight between feet)

#### Entry Phase

- Left leg turns and drops
- Weight shifts to left side
- Center of gravity shifts, centers over left foot

- Pivot occurs on the inside of the left foot
- Pivot stops early on left foot, preventing over-rotation
- Lower body drops as left leg bends
- Left knee rotates open and lowers down

#### Entry

- Right leg lifts and sweeps
- Right foot remains grounded until the COG is appropriately moved left
- Right leg extends and attempts to reach the right side of the ring as it moves around the axis established by the left side
- Knees kept apart
- Lead with inner part of right thigh

#### Entry.

- Upper and lower body rotate as a unit
- Long left arm counters wide sweeping right leg
- Left arm remains above and inside of the left knee
- “Armpit over knee” alignment

#### Drive Phase

- The right leg drives from outside into the center of the circle
- Right knee lifts, foot comes under the knee
- Left foot drives toward right sector line
- Drive occurs once right leg has passed left
- It is a jump, not a lunge movement
- The bend of the left knee is maintained to aid in landing the left foot at the front quickly

#### Drive.

- Head and shoulders stay back as right leg and hip move in front
- Separation is maintained by keeping eyes, shoulders and chest in the direction of the throw just prior to leg foot push-off
- All levers are shortened after push-off
- Left arm relaxes and lowers as the athlete prepares to pivot around the shot
- Left knee moves into close proximity to the back of the right knee

#### Transition Phase

- Shoulders and shot “wrap the sector”
- Upper body tilts away from sector, head and chest up
- Right leg bends naturally as the foot is returned to the surface at the center of the ring
- Right foot touches down early (9 o’clock)
- Long pivot continues rotation
- Right knee remains bent until left foot lands
- Left leg “wheels” close and foot lands quickly

#### Transition

- Upper body remains towards back half of the circle

- Upper body torque is maintained by left arm being placed down and right elbow held up
- Weight is centered over the right leg with the shot placed behind the right side
- Delivery is delayed until left foot is in place

#### Delivery Phase

- Power position features a narrow base
- Foot stagger features a left toe, right instep alignment
- Left side forms a 45-60 degree angle from shoulder to foot
- Provides leverage for delivery
- Athlete is prepared to LIFT, then ROTATE

#### Delivery

- Athlete explosively lifts upward
- Both feet come off the ground
- Left arm extends in a outward and upward direction (strong stretch reflex)
- Head thrusts back
- Shoulders and hips rotate to face the direction of the throw
- Knees fully extended
- Right elbow at 90 degrees

#### Delivery

- Shoulders and hips rotate to face the direction of the throw
- Knees fully extended
- Left arm bends, drives in and back
- Right elbow remains at 90 degrees and drives through the same line as the hand
- Eye is kept on right elbow to prevent pulling away with the head as shot is delivered

#### Recovery Phase

- Right side extends as shoulder and arm are held high following release
- Rotation continues until athlete lands 90 degrees to direction of throw
- Athlete lands on a flat right foot
- Levers are lengthened for stability
- Left leg and arm extend toward 6 o'clock
- Never touch the stopboard!

#### Summary Points

- Too much at the back leaves too little time to recover at the front
- Upper and lower body turns as a unit
- Left side turns and drops, right side lifts and sweeps
- Entry push-off direction is toward right sector line
- Linear drive is sprint-like, knee under toe
- Transition is key
- Wrap towards left sector line
- Tuck into turn
- Grind right foot in middle

### Summary Points

- Narrow base at front
- Left foot lands early
- Lift, then rotate
- Double leg lift, lock the quads
- Arch into the delivery
- Back of head directly above right heel
- Rotate into recovery