Technical Variations in The Rotational Shot Put

Mohamad A. Saatara
Assistant Coach
University of California, Berkeley
- As early as the late 1940s and early 1950s

- 1970s
  - B. Oldfield USA – ITA world record 1975 22.86m/75ft
  - A. Baryrishnikov USSR – IAAF world record 1976 22.00m
  - R. Oesterreich DDR – not ratified 1976 22.11m

- 1980s to present
  - incremental increase in the number of rotational shot putters at the highest levels
  - predominant method of shot putting in the United States

- women have had success with the rotational shot put in recent decades
  - Kumbernuss GER – over 19m
  - Jill Camarena-Williams USA – 20.18m
Biomechanical Considerations

- Basic projectile dynamics
  - height, angle, RELEASE VELOCITY determine distance achieved

- Energy dynamics
  - conservation of momentum
  - conservation of energy

- Shot position
  - creates limitations
  - creates opportunities

Interrelationship between the thrower's body and the shot put

- acceleration – stop – delivery
- acceleration – “loop” – delivery
Biomechanical Considerations

- Path of the shot across the circle
  similar acceleration curve to glide
  but substantially longer path
Segments of The Put

- Starting point and/or wind up through entry into the turn – first double support (DS1)

- Right leg lift off to left leg lift of – first single support (SS1)

- Flight (F)

- Right leg landing to left leg landing – second single support (SS 2)

- Left leg landing to final delivery – second double support (DS2)

- Recovery (R)
The Start of The Put – DS1 Through SS1

Active entry with the lower body and legs

Active entry with the left side and upper body

Low starting position while pulling the shot put

Low starting position with shot put in front
“The Middle” – SS1, F, SS2

Throws with large upperbody and lower body torsion  
Throws with low torsion

Early initiation of SS2 with short flight  
Late initiation of SS2 and long flight
Variations In The Final Delivery

- Final delivery
  Classic delivery of the shot

Rotational delivery

Linear transfer delivery
Overall Technique Themes

Emphasis on Rotational movement

Shot putter rotates around the shot

Emphasis on Linear movement

Shot putter generates small orbit with the shot
Techniques Which Are Balanced Or Neutral
Rotational Shot Put Continuum

Rotational movement across ring

Linear delivery

Long % ground contact

Short % ground contact

Rotational delivery

Rotational movement across ring
Conclusions/Discussion

THANK YOU!!!

Contact:
Mohamad Saatara
Cal Track & Field
msaatara@berkeley.edu
Click to add title

Click to add text
Click to add title

Click to add text
Bibliography

Click to add text
Contact
Mohamad Saatara
California Track & Field
msaatara@berkeley.edu