**THROWERS INFORMATION:**

**Basic Throwing Principles**

1. In all four throwing events the distance obtained is dependent upon the speed, the angle, and the height of release of the implement. Aerodynamic factors also affect the javelin and the discus.

2. Involve the entire body while achieving a long range of motion. The goal of the thrower is to exert the forces of the entire body over the greatest distance possible, and for the longest period of time.

3. Achieve a summation of forces. Each lever used in the throw must move faster than the previous lever, with each lever moving faster in the direction of the throw than the implement. To obtain this maximum contribution to speed, the stronger, larger, but slower muscles must be used first (thighs, trunk); followed by the weaker, smaller, but faster muscles of the arms, hands, feet, and lower legs. Although there is a sequence involved, it is imperative that all the forces be applied as simultaneously as possible.

4. The various forces of the body should be exerted in a definite sequence and with proper timing. These forces should be applied in the direction of the throw.

5. As a general rule in throwing, there is more horizontal drive than lift in the preliminary movements; in the delivery there is more lift than drive. The athlete has to master a balance between the two while applying forces in the proper direction.

6. For maximum speed of release the ground must provide adequate resistance to the thrower's movements for as long as he/she is in contact with the implement.

7. Center of gravity over base. During the application of force, the athlete has to have his feet in the correct position, and achieve a balance for a maximum contribution.

**Shot Put Technique (linear)**

The throw broken down: (right handed thrower)

(a) stand-up and hold:

-shot rests on base of fingers

-arm relatively horizontal to ground

-shot pushed against neck, underneath chin

-stand with back facing direction of throw at the back of the circle

(b) preparation for the glide

-center of mass lowered and primarily on right leg

(c) glide

-short body movement to give the shot momentum

-hop-like movement keeping the center of mass low and over the right leg

-ideally both feet arrive at power position at the same time

(d) power position

-right foot perpendicular to the throwing direction

-center of mass low and over right leg

-left leg extended with toe planted to form base of support

-base of support as wide as possible without hindering the throwing action

(e) putting action

-left arm swings over the top, opening the doorway for the throwing action

-lifting action is initiated by using the slower, stronger muscles of the leg, with forces then transferred to the trunk and arms

-shot released at a 40 degree angle over a straight left leg **A Basic Teaching**

**Progression**

1. Introduction of the hold

2. Introduction of the shot's proper position under the chin against the neck

3. Putting the shot downward into the ground to establish proper wrist action

4. Deliveries: facing the direction of the throw, sitting back on a bent right leg with both feet pointing toward the direction of throw, transfer weight from the right leg to the supporting left toe and deliver the shot.

5. Cross-step and putting action.

6. One step forward and putting action.

7. One step back and putting action.

8. Series of glides on a straight line.

9. Glide in the circle to a premarked power position.

10. glide connected to the putting action.

11. Hop on right leg, tuck the foot under the body at a righ tangle.

12. Pivot on a 15cm platform (dependent upon height of athlete).

13. Pivot on a 15cm platform and putting action.

14. Glide from elevated area and throw.

15. Glide and throw under a high jump bar to promote a low power position.

**A Few Useful Drills**

**The A-Drill:**

(corrects the problem of a late left foot to the front of the circle)

The athlete, from a crouched position, drives the left foot back until only the right heel and left toes are in contact with the circle. Stop. Hold that position, making sure that the chest is on the right thigh, shoulders and head are square facing to the rear, and the knees are straight.

Variation:

Place a medicine ball directly behind the left foot and have the athlete punch or push the ball with the left foot as he drives his left foot back to the toe board.

**Rubber Cable Drills:**

The use of a rubber cable tied to the ankle of the left foot and attached to a fence or post. The athlete can practice by holding onto the fence and punching the foot back repeatedly.

Variation:

Use the rubber cable attached to the left ankle while doing glides. The resistance forces the athlete to use the left leg more aggressively.

**The Beam:**

(corrects the problem of the left foot being in the bucket)

Use a 4x4 or a 2x4 on which the athlete can practice the glide and even do the complete throw.

**The Wall Drill:**

(to help leg lift)

The athlete faces a wall so that his/her toes are up against the wall. Then the athlete torques and lowers the body into a standing put position with the left knee against the wall as well. The athlete executes a standing put reaching up the wall with the right hand in a putting action. The extension of the left leg is as high as possible so that the athlete is up on the left toes and the right foot is lifted straight up and the toes are pointing down and backwards.

**Discus Technique** (right handed thrower)

(a) **the wind-up:**

- The athlete holds the discus so that the first half of discus is in front of the index finger, palm on top, and the tips of the fingers are curled around the edge at the first joint.

(b) **preliminary swings:**

- Athlete begins with a stable hand position where the discus is held high infrint of the left shoulder, resting on the left palm with the righ thand on top of the discus. The discus is swung back to the right at shoulder level twice to establish a rhythm to start the turn and to get the discus behind the body.

(c) **turn:**

- Center of mass lowered. Left leg opens toward the direction of the throw.

- The legs begin pivoting to the left on the balls of the feet, as the center of gravity is shifted directly over the ball of the left foot.

- When the left foot is pointing to about 3 o'clock the right foot pushes off from the back of the circle.THe right leg steps across the circle, then the left leg follows.

- The left leg is brought through, extended with foot planted, as the thrower arrives in power position with the arm left behind.

(d) **power position:**

- The right foot should land about 8 cm in the front half of the circle, with toes pointing from nine to six o'clock, on the ball of the foot with the shoulders square to the six o'clock position and directly over the right foot.

- Position is similar to the power position in shot except that the arm is extended back at shoulder height creating a torque.

(e) **delivery:**

- As the right foot lands it does not stop rotating as it pulls the right side around a braced left side of the body as it is acting like a hinge.

- When the discus has reahed the lowest point in the path of the discus the hips are thrust forward by turning the right leg.

- When the discus leaves the hand, it comes off the forefinger in a clockwise rotation, shoulder height, with the back of the hand facing up.

**Basic Teaching Progression**

**the throw**

1. Introduction of the hold; (the first half of discus is in front of the index finger, palm on top, and the tips of the fingers are curled around the edge at the first joint.

2. Swinging the discus in a figure 8 to establish a secure hold.

3. Roll the discus from the index finger onto the ground to get a feeling for the release of the implement from the hand.

4. Develop a flat release just above the ground- like skipping pebbles on the water.

5. Stand sideway to the direction of the throw and after one cross step into power position-throw.

6. Stand sideways to the direction of the throw. Step back bending the right leg to establish the power position, swing the discus behind the body to create torque, then throw.

7. Standing throw from power position.

**the turn**

1. Turn 360 degrees on a straight line, body arriving above the right leg, left toe just touching the ground. Do continuously.

2. Turn on a straight line without planting the left toe maintaining body weight above the right leg.

3. Turn in the circle and arrive on a pre-marked power position, maintaining dynamic balance, establishing torque.

4. With the discus fixed to the hand, after the turn arrive in the power position. From here turn the heel, knee, and hip quickly against the planted left leg.