

Javelin
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General components of throwing-Javelin:

- **Factors that affect distance of each event**
- **Phases of the throw:**
Prep phase, Prelim phase, Building phase, Transfer phase, Delivery phase
- **Methods of training each phase**
- **Progression towards a complete throw.**

Throwing General

- **Force is applied from the ground up**
- **Hips to the shoulders and out the throwing arm**
- **Long range of motion benefits maximum release velocity.**
- **Slow to fast= Acceleration**
- **Keep center of mass over or behind the power leg**

Factors that affect distance

- **Speed of implement at release**
- **Angle of release**
- **Height of release**

Directional Forces

- **Vertical**
- **Horizontal**
- **Angular/Rotational**
- **Centrifugal**

Common Critical Factor-Core/Hips

- **Hips must lead shoulders for optimum power**
- **Hips are the link that chains lower and upper body power**

What you should be looking for:

- Head position – guides the body
- Shoulder position (of non throwing arm)
- Throwing hand position
- Power leg balance
- Power leg action
- Blocking leg landing
- Blocking leg action
- Blocking side action
- Power hip movement
- Rhythm of throw



Factors that affect distance of the Javelin

Controllable:

- Angle of release 36 (34-38)
- Speed of release- 20-23 m/s
- Height of release – 105% of body height
- Attitude of release 36-40

Not controllable:

- Tail wind – High and through point
- Head wind – low and through point control tip
- Cross wind – look for best tail wind

Phases of the throw Prep phase = Grip

- Finnish Grip
- American Grip
- Fork Grip

Used by preference. Thumb and palm stabilize javelin. Hold like you are holding a new chick, you don't want to squeeze it but you don't want it to fly away.

Prelim speed phase- Run up

- 7-11 steps varies according to athlete preference and abilities
- Set up of body position and speed for cross steps
- linear velocity-increases to a smooth transition



Building Phase- Cross step



- 5-7 or 9 steps (l-r-l-r-l)
- Varies – Set up body to drive
- Linear velocity 6-7m/s acceleration to
- Only throw that utilizes the left side drive (right handed thrower)

Transfer phase- Penultimate

- Drive to block – third step out (L-R-L)
- Linear force
- Important power directing element of throw



Transfer Phase

- Quickly off right
- Drop into the left- carried by momentum
- Right hip snaps around left side
- Rotational force



Delivery Phase

- Delivery arm (lat) wraps around (over) Blocking leg and out into throw
- Linear/horizontal forces



Training

Building Progressions to Complete Throw

Runway- Prelim Speed Phase

- Running drills- working the proper running technique- erect posture
 - High knees, circular motion of leg
 - Dorsi-flexion of foot
- Acceleration phase- chest is forward in drive phase, hips work under shoulders by the end of the running steps



Building phase- Cross steps

- Drive is off left leg
 - Purpose of the cross step is to push hips ahead of shoulders working separation
 - Scissors -left leg pulling motion
 - Gallops- right foot/knee drive
 - Cross step- rhythm - smooth driving motion of hips in a forward direction with little movement of shoulders.
- These drills will also work as strengthening use tubing to resist and pull athlete



Transfer Phase- Penultimate

- Stride length of last three strides: 2.15m, .77m, 1.60m is an average.
- Speed of release is a primary factor but the athlete must be able to handle the speed when they arrive at the plant for it to be of any use.



Drills to train penultimate/plant

- Creek jumps- drive over a lane off of left leg to right foot touch down.
- Hip poppers- works right hip snapping around
- Left leg plant drill- works left leg snapping through



Specific Strength & Flexibility

- Duncan Atwood's arch drill
- Wire throws
- Throw downs



Javelin Circuit

- Movement through circuit non-stop
- Weight increases as ease increases
- Position more important than speed
- Full range of motion



Strengthening

- 200m sprints/sprint training
- Multiple crosses 50m+
- Med-ball shoulder strength can be very specific or general
- Javelin Circuit- general-specific to javelin
- Heavy Javelins

Med-ball exercises

