Youth Hammer Throwers’ Handbook

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Olympic Champion
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1. Keep your feet and hips straightforward. Turn your shoulders to the right. Place the hammer on the ground approximately two feet behind and to the right of your right foot. The fixed horizontal and vertical lines mark the highest point of the thrower's head and the center (turning axis) of the orbiting hammer.

2. Pull the hammer up and out away from your body. Stand erect in the center of the hammer’s orbit. Avoid significant swaying from left to right. Consciously feel more weight on left leg.

3. Keeping your shoulders level and body centered, pull the hammer across the front and up, keeping your feet straight and head erect. As the hammer passes zero degrees roll the back of your right hand over your left and slightly lower your left shoulder as the hammer rises.
As the hammer moves to the back, your two hands closely clear the center of the top of your head with your left forearm close to your right cheek and your right elbow pulls back. The first wind is done with an easy tempo.

As the hammer drops, turn your shoulders to the right and keep your right foot solidly straight and your hips straight to the front, thereby creating a blocking action and torque in your right leg and squared away hips.

Your right elbow points backward and your left upper arm brushes close to your chest, keeping the orbit around the turning axis of your left foot. The blocking of your straight right foot and hips squared to the front reduces body sway.
Push/stroke the hammer out, away, and across the front with your hands, the torque in your hips, and the right side of your body. The low point of the orbit should be slightly to the right of zero degrees. Increase the tempo of wind two.

In wind two, again roll the back of your right hand over your left hand, keep your left shoulder slightly lower than your right, and push the hammer more to the left with a fully extended right arm. This will cause the hips to also rotate slightly left and counter to the right in the opposite direction of the pull of the hammer.

As the hammer reaches its apex, your hands will be to the left of your head as your right forearm clears closely the top of your head. Your right heel comes down flat and straight to establish a blocking to prevent excessive swaying.
As the hammer begins to drop, turn your shoulders to the right but not as much as in wind one. Using the torque in your right hip and right leg, stroke the hammer down more vigorously with the hands and rotating right side your body.

As the hammer descends accelerate the hammer's speed by dropping, as seen in relation to the fixed horizontal and vertical line.

Stroke the orbiting hammer down and across the front so that the lowest point drops to zero degrees about six inches above the ground. Make sure both arms are fully extended from relaxed, concave shoulders before the hammer reaches zero degrees. Counter your hips back against the opposite pull of the hammer as you rotate on the heel of your left foot and the ball of your right foot. Keep the back in a firm, straight position.
Keep your head erect, chin up and line of vision aligned with, but above the moving hammer. Never look directly at the hammer or down at the ground for visual orientation for balance. Stroke the hammer well out and around your rotating left foot while countering in the opposite direction of the fixed vertical line (the hammer's turning axis). Keep your chin slightly raised and your arms and shoulders relaxed. Let the hammer lead you into a wide orbiting turn.

To prevent dragging the hammer, attempt to keep both feet rotating on the ground with knees bent and tightly together until the hammer feels as if it has passed 90 degrees and is leading you around into the back half of the turn. In actuality on a correctly executed, high speed, throw, the right foot leaves the ground at approximately 90 degrees, sometimes sooner. Keep your chin raised and your line of vision above the hammer as you counter with your hips against the hammer's opposite pull.
As the hammer approaches 180 degrees, drive your right foot up over your left ankle, keeping your knees closely together. The rotating speed of the ball of your left foot and the quickness of your right foot reduce the single support phase of the throw and gives your hip axis a slight lead over your shoulder axis. Keep your head in the triangle formed by your two straight arms. Maintain your line of vision above the hammer.

As your right foot lands, counter back to your bent left leg and the center point of the hammer's orbit (Note the vertical line in image 16). Attempt to keep your line of vision above and behind the hammer.

With both feet on the ground, actively stroke the hammer down to zero degrees with your hands and the right side of your body to build sufficient hammer speed for effective countering and to bring you back to the center point of the orbiting hammer.
As the hammer passes zero, stroke the hammer well out to the left. By lifting your chin higher as the hammer rises, this will allow you to counter back even more from the vertical line, center point of the throw. Never allow the left shoulder to lead the hammer into the turn. Again as in turn 1, relax and let the hammer run freely and feel as if it’s leading you into the turn.

In turn 2 you counter back against the pull of the hammer with a straight back and raised head even more than in the same position in turn 1 (image 14). Your right foot leaves the ground well before the hammer reaches 90 degrees.

Keep your chin high and your line of vision above the hammer. Tip your head back and to your slightly lower left shoulder as you begin to drop from the hammer’s apex at 180 degrees.
As the hammer begins its descent, keep your head in the triangle. Drop to your left to your bent left knee as your right foot strikes the ground on the ball of your foot. Keep your line of vision above and behind the hammer on landing. As you and the hammer drop, get your left heel down as quickly as possible.

By maintaining relaxed, fully extended arms from concave shoulders, a raised chin with your head back, and both feet rotating in synchronized heel toe movement, you will return to the vertical center of the throw as the hammer closely clears the ground at zero degrees.

Again stroke the hammer with both hands and the right side of your body. Let it run well to the left. Do not lead with your left shoulder. With your chin raised and head back counter against the pull of the hammer. Each turn is executed exactly the same.
Your right foot leaves the ground as the hammer reaches approximately 60 degrees in order to achieve an early right foot landing and a long double support phase. Again as in turns 1 and 2, keep your head in the triangle of your long, relaxed arms, and let the hammer lead you into the final turn.

As the hammer passes 90 degrees, counter back with the back of your head and shoulders even more from the vertical center line of the orbiting hammer than at the same point in turn 2 (see image 19), but be most careful at this point not to lead with your left shoulder.

The countering in the final single support phase of turn 3 is technically the same as in turn 2 only faster and more pronounced (see image 20).
Your right foot lands quickly on the ball of the foot and your line of vision is above and behind the hammer. Your hip axis will have a slight lead on your shoulder axis and you will catch the hammer well behind. Immediately rotate both feet, get your left heel down quickly and stroke the hammer down to zero degrees to complete the final turn and flow into the release.

To maximize your countering against the hammer and to stay directly over the turning axis, maintain long arms, relaxed shoulders, a raised chin, and your head tipped well back and toward the left shoulder.

Rotating both feet quickly, stroke the hammer with your arms and the right side of your body past zero and out to the left as in the two previous turns. Keep your shoulders level and your head way back and tipped to the left as it rotates in synchronization with your rotating feet around the central axis. Do not jerk your left shoulder ahead of the hammer.
At the moment of release the countering of your head and shoulders reaches its maximum distance from the central, vertical turning axis. Your line of vision is directly straight up to the sky. This causes the hammer to accelerate to its maximum speed.

Finnish your throw with your hands high above your head and recover your balance by returning to the central axis of the throw.

The following images and comments may assist you in mastering the challenges of the hammer throw.

Sergei Litvinov’s second wind and entry into the first turn.
This thrower effectively sweeps the hammer in a wide range with long, relaxed arms and shoulders past zero degrees letting the hammer lead him out around the left foot into the back half of the turn. His head and line of vision remain in the triangle of his arms and shoulders to the completion of turn one. On the landing of his right foot with a good early catch of the hammer, his line of vision appears to be behind and above the hammer. As he strokes the hammer down to zero degrees to complete turn 1 and enter turn 2, he commits a technical error that can cause him greater problems later in the throw. He pulls his head out of the triangle and appears to be leading with his head and left shoulder into turn 2. This can reduce his effective hammer radius, slow down the speed of the hammer, and perhaps cause him to fall heavily to the right foot upon completion of turn 2.

This perpendicular view of the second turn of an 80.46 meter throw by Youri Sedykh reveals the sweeping of the hammer well around to the back with the hips, shoulders, arms, and head all aligned with the hammer until approximately 180 degrees. From that point until the landing of the right foot the hip axis takes a slight lead (approximately 30 degrees) over the shoulder axis, arms, and line of vision. From that point Sedykh accelerates the hammer by stroking it with the
right side of his body and hands to zero degrees, bringing his shoulder axis, arms, and line of vision back into alignment with his hip axis and the hammer for the entry into the final turn.

low point.

The thrower sweeps the hammer down from the second wind through zero degrees well out to the left, letting the hammer lead the alignment of his hip axis, shoulder axis, head, and line of vision around to 180 degrees.

Sedykh slings the hammer down from the second wind past zero degrees well out to the left letting it lead him into turn 1. Just before 180 degrees, he begins to gain a slight hip axis lead over his shoulders, head, and arms. As his right foot lands, his shoulder axis, is well back and his line of vision is behind the hammer. With the slight torque in his hips he strokes the hammer with the right side of his body down through zero degrees where his hips, shoulders, fully extended arms, and line of vision come back into alignment. He lets the hammer well out around the left foot to lead him around to 180 degrees where he begins to drop to the left and the center of the throw, where his right foot will come down to initiate the next push of the hammer down to and around zero degrees for the entry into the final turn. At no point does he allow the left shoulder to lead the turns and pull the hammer from its full orbit.
In this illustration of a four-turn thrower the dark and light bar lines under the thrower’s feet indicate the time spent in the two-legged support phase (dark line) and in the one-legged support phase (white line). The one-legged support phase should be shorter than the two-legged support phase, especially in the last turn. This is most effectively achieved by lifting the right foot early enough so that the thrower can achieve a right foot landing in the back half of the turn at approximately 230 degrees. The most effective the range for applying power and speed to the hammer is from the right foot landing through zero degrees.
This sequence of images demonstrates an effective entry into turn 1 off the second wind with a wide sweep of the hammer out to the left, letting the hammer lead the thrower into turn one. Notice the increase in the thrower’s countering between image 11 (the entry into turn 1) and image 16 (the entry into turn 2) by a straightening of the back against the increasing pull of the faster hammer while maintaining long relaxed arms, the hammer well out to the left, and the hips shoulders, arms, and line of vision all in alignment.
Sergei Litvinov, a 4 turn thrower, Olympic Champion and World Record Holder, personal best: 86.04 M, two preliminary winds and a toe turn entry into turn 1.

2004 Olympic Champion
75.02 M
OLGA KUZENKOVA, 1997, 71.22 M