

# Coaching Youth to Throw the Hammer

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# Coaching Youth to Throw the Hammer

## Section I. Safety and Equipment

### A. HAMMER SAFETY GUIDELINES

**Post the following listing in a conspicuous location within the throwing area**

#### **MEETS**

1. Only adults (18 and over) allowed in throwing sector during meets and pre-meet warm-ups.
2. Never more than two (2) individuals between the sector lines when throwing is taking place.
3. Individuals standing inside the sector lines when throwing is in progress should be reasonably separated from each another. (suggested distance, 20 feet)
4. No warm-up movements (turns, winds, throws, etc.) with the implement outside of cage during meets or pre-meet warm-ups.
5. Spectators, officials, members of the media, and coaches not allowed within five (5) feet of the cage while throwing is in progress. Flagging placed four (4) back from the hammer cage is suggested.)
6. Instruct throwers that they may not proceed until officials give them verbal notice to throw.
7. Retrievers and markers must never turn their backs to the throwing ring. If a marker is not out of range of a throw, he/she should move sideways, rather than towards or away from the throw, as it approaches them.
8. Never allow fans, parents, athletes, or members of the media to congregate along the left or right sector lines while the competition or practice is in progress.

#### **PRACTICE AND TRAINING**

1. All hammer throwing should take place at the beginning or end of "regular" track practice, when the field is clear of all non-hammer throwing individuals.
2. All throwing should be under the strict supervision of a coach or competent adult.
3. Use of alternative implements (soft-landing hammers, chain hammers, towels, cones, etc.) should be considered when damage to the landing area is an issue. Coaches' discretion should be exercised with respect to use of alternative implements in the training of inexperienced throwers.
4. Instruct throwers to bring out-of-control throws back under control inside the ring or cage, rather than just releasing the implement, unless so doing would, in the judgment of the thrower, cause injury to him/herself or others.

5. Instruct throwers to make certain that all potential landing areas are clear prior to throwing the implement.
6. Employ as many of the meet safety rules during practice sessions as is possible.

## B. EQUIPMENT

### 1. **Hammer throwing shoes**

The major sports shoe manufacturers market specialty hammer throwing shoes. Common running flats are inadequate and dangerous footwear for learning the hammer throw because of their thicker soles and sharp edges. The least expensive, thinnest-sole sneakers are the best until the specialty shoes are purchased.

### 2. **Iron hammer (12 pounds), additional hammer wires, soft landing hammer (12 pounds), and chain link practice hammers for novices**

Hammers and various length additional hammer wires can be purchased from track and field equipment companies. ([www.springcoathletics.com](http://www.springcoathletics.com), [www.ontrackandfield.com](http://www.ontrackandfield.com), [www.mfathletics.com](http://www.mfathletics.com)).

Springco and MF athletics also market hammers, which prevent damage to turf fields. Springco's phone number is: 1-800-383-0305.

### 3. **Protective glove**

To protect injury to the left hand (right handed thrower) track and field equipment companies market a specialty hammer-throwing glove. For less than half the cost of a specialty glove, purchase an inexpensive pair of leather, work gloves at Wal-Mart, Home Depot or other similar stores. Cut off the tips of the fingers and the whole thumb of the left glove. Turn the right glove inside out. Spread rubber cement on the rougher surface of what was the inside surface of the right glove that now has become the outside surface of a second left glove. Using a long screwdriver, push the fingers and thumb of the inside out former right glove into the fingers and open thumb-hole of the left glove. The tips of the fingers of the inserted glove are then cut off at the same point where the tips of the left glove were cut. The protruding thumb of the inserted glove is also cut off. Add a glued-on Velcro strap to secure the glove at the wrist and you have a double thickness, excellent hammer throwing glove.

### 4. **Cement or smooth asphalt throwing surface**

A throwing surface no smaller than 10 feet x 7 feet is essential for specific hammer throw technique drills.

5. **Wooden, broom-handle, short straw broom, or metal pipe (approximately 4 feet long)**

Used to teach hammer throw footwork and release.

6. **Aluminum baseball bat**

More hammer-like in feeling, also used to teach hammer throw footwork and release.

7. **2 1/2 or 5 pound Olympic weightlifting plate**

Slide the plate down over the handle of the aluminum baseball bat to add additional weight when the bat is thrown.

8. **Chalk**

Regular white chalk to mark the throwing surface for specific technique drills.

9. **Rubber medicine balls (5 and 6 kg)**

Used for practicing hammer throw release drills.

10. **Puds (20 and 30 pounds) & shots (4, 5, 6 kg and 12 pounds)**

Used for specific, explosive strength building drills.  
(see web site [www.throwfarther.com](http://www.throwfarther.com) for specific drills)

11. **A protective cage, a seven-foot diameter hammer throwing circle, or a hammer throw insert for a discus circle**

For competitions and effective training in the hammer throw a regulation circle and protective cage are required. They can be purchased from track and field equipment companies. (contact Lance Deal regarding protective cages and puds at: [Ideal83@aol.com](mailto:Ideal83@aol.com))

12. **Tape measure**

A tape measure, either steel or fiberglass, will be needed to lay down distance lines and sector lines (60 degrees for high school competitions). Fiberglass is less expensive and 250 feet is recommended. Establish subliminally high expectations.

## Section II. Selecting Athletes

### A. ATHLETIC FITNESS EVALUATION

#### Quadrathlon Scoring Tables

Max Jones, Great Britain (National Throws Coach)

#### PRACTICAL USES:

1. Analyze throwers' ability levels. If their scores increase, their power has increased.
2. Evaluate the progress of their training. Weaknesses can be identified and worked on.
3. Determine their readiness for competition.
4. Provide motivational help during the long winter months.

#### HOW IT WORKS:

1. Standing Long Jump Place feet over the edge of the sandpit. The athlete crouches, leans forward, swings his/her arms backwards, then jumps horizontally as far as possible, jumping from both feet into a sandpit. Measure (metric) to the nearest point of contact. *The start of the jump must be from a static position.*
2. Three Jumps Start with the feet comfortably apart with the toes just behind the take-off mark. The athlete takes three continuous two-footed bounds into the sandpit. *Spikes allowed. Static start. Feet must be parallel on each jump phase.*
3. Overhead Shot Throw The athlete stands on the shot toeboard, facing away from the landing area, with the feet a comfortable distance apart. The shot is held cupped in both hands. The athlete crouches, lowering the shot between his legs, then drives upwards to cast the shot back over his head. There is no penalty for following through, but the thrower must land feet first and remain upright. Measurements (to the nearest cm) are taken from inside the toeboard. *Implements are appropriate for age group. Please watch the safety aspect.*
4. 30 Meter Sprint On the command the athlete moves to the set position. On the starter's signal he sprints from a stationary set position as fast as possible to the finish line. The time-keeper stands at the finish and times the run from the moment that the runner's foot contacts the ground on the first running stride to the moment when the runner's torso crosses the line. *Spikes allowed. Hand timed.*

<u>points</u>	<u>standing triple bound</u>	<u>30 meters (standing start)</u>	<u>standing long jump</u>	<u>overhead shot</u>	<u>points</u>
1	9' 10"	5.80s	3' 3 ¼"	13' 1"	1
2	10' 1"	5.77s	3' 4"	13' 8"	2
3	10' 4"	5.74s	3' 5 ¼"	14' 3"	3
4	10' 7"	5.71s	3' 6 ½"	14' 9"	4
5	10' 11"	5.68s	3' 7 ¼"	15' 4"	5
6	11' 2"	5.66s	3' 8 ½"	15' 11"	6
7	11' 5"	5.63s	3' 9 ½"	16' 6"	7
8	11' 8"	5.60s	3' 10 ¾"	17' 1"	8
9	11' 11"	5.57s	3' 11 ½"	17' 7"	9
10	12' 2"	5.54s	4' ¾"	18' 2"	10
11	12' 5"	5.51s	4' 2"	18' 9"	11
12	12' 9"	5.49s	4' 3 ¼"	19' 3"	12
13	13' 0"	5.46s	4' 4"	19' 10"	13
14	13' 3"	5.43s	4' 5"	20' 5"	14
15	13' 6"	5.40s	4' 6 ¼"	21' 0"	15
16	13' 10"	5.37s	4' 7"	21' 6"	16
17	14' 1"	5.34s	4' 8 ¼"	22' 1"	17
18	14' 4"	5.32s	4' 9 ½"	22' 8"	18
19	14' 7"	5.29s	4' 10 ½"	23' 3"	19
20	14' 10"	5.26s	4' 11 ½"	23' 10"	20
21	15' 1"	5.23s	5' ½"	24' 4"	21
22	15' 4"	5.20s	5' 1 ¾"	24' 11"	22
23	15' 8"	5.17s	5' 3"	25' 6"	23
24	15' 11"	5.15s	5' 3 ¾"	26' 1"	24
25	16' 2"	5.12s	5' 5"	26' 8"	25
26	16' 5"	5.09s	5' 6"	27' 2"	26
27	16' 9"	5.06s	5' 7"	27' 9"	27
28	17' 0"	5.03s	5' 8"	28' 4"	28
29	17' 3"	5.01s	5' 9 ¼"	28' 10"	29
30	17' 6"	4.98s	5' 10 ½"	29' 5"	30
31	17' 9"	4.95s	5' 11 ¼"	30' 0"	31
32	18' 0"	4.92s	6' ½"	30' 7"	32
33	18' 4"	4.89s	6' 1 ½"	31' 2"	33
34	18' 7"	4.86s	6' 2 ¾"	31' 8"	34
35	18' 10"	4.84s	6' 3 ½"	32' 3"	35
36	19' 1"	4.81s	6' 4 ¾"	32' 10"	36
37	19' 4"	4.78s	6' 6"	33' 5"	37
38	19' 7"	4.75s	6' 6 ¾"	33' 11"	38
39	19' 11"	4.72s	6' 8"	34' 6"	39
40	20' 2"	4.69s	6' 9"	35' 1"	40
41	20' 5"	4.67s	6' 10 ¼"	35' 6"	41
42	20' 8"	4.64s	6' 11"	36' 3"	42
43	20' 11"	4.61s	7' ¼"	36' 9"	43
44	21' 3"	4.58s	7' 1 ½"	37' 4"	44
45	21' 6"	4.55s	7' 2 ½"	37' 11"	45
46	21' 9"	4.52s	7' 3 ¼"	38' 5"	46
47	22' 0"	4.50s	7' 4 ½"	39' 0"	47
48	22' 3"	4.47s	7' 5 ¾"	39' 7"	48
49	22' 6"	4.44s	7' 6 ½"	40' 2"	49
50	22' 9"	4.41s	7' 7 ¾"	40' 9"	50

<u>points</u>	<u>standing triple bound</u>	<u>30 meters (standing start)</u>	<u>standing long jump</u>	<u>overhead shot</u>	<u>points</u>
51	23' 1"	4.38s	7' 8 3/4"	41' 3"	51
52	23' 4"	4.35s	7' 10"	41' 10"	52
53	23' 7"	4.33s	7' 10 3/4"	42' 5"	53
54	23' 11"	4.30s	8' 0"	43' 0"	54
55	24' 2"	4.27s	8' 1 1/4"	43' 6"	55
56	24' 5"	4.24s	8' 2 1/2"	44' 1"	56
57	24' 8"	4.21s	8' 3 1/4"	44' 8"	57
58	24' 11"	4.18s	8' 4 1/4"	45' 2"	58
59	25' 2"	4.16s	8' 5 1/2"	45' 9"	59
60	25' 5"	4.13s	8' 6 1/4"	46' 4"	60
61	25' 9"	4.10s	8' 7 1/2"	46' 11"	61
62	26' 0"	4.07s	8' 8 3/4"	47' 6"	62
63	26' 3"	4.04s	8' 9 3/4"	48' 0"	63
64	26' 6"	4.02s	8' 10 3/4"	48' 7"	64
65	26' 10"	3.99s	8' 11 3/4"	49' 2"	65
66	27' 1"	3.96s	9' 1"	49' 9"	66
67	27' 4"	3.93s	9' 2 1/4"	50' 3"	67
68	27' 7"	3.90s	9' 3"	50' 10"	68
69	27' 10"	3.87s	9' 4 1/4"	51' 5"	69
70	28' 1"	3.85s	9' 5 1/4"	52' 2"	70
71	28' 4"	3.82s	9' 6 1/4"	52' 7"	71
72	28' 8"	3.79s	9' 7 1/4"	53' 1"	72
73	28' 11"	3.76s	9' 8 1/2"	53' 8"	73
74	29' 2"	3.73s	9' 9 3/4"	54' 3"	74
75	29' 5"	3.70s	9' 10 1/2"	54' 9"	75
76	29' 9"	3.68s	9' 11 3/4"	55' 4"	76
77	30' 0"	3.65s	10' 3/4"	55' 11"	77
78	30' 3"	3.63s	10' 2"	56' 6"	78
79	30' 6"	3.59s	10' 2 3/4"	57' 1"	79
80	30' 9"	3.56s	10' 4"	57' 7"	80
81	31' 1"	3.53s	10' 5 1/4"	58' 2"	81
82	31' 4"	3.51s	10' 6"	58' 9"	82
83	31' 7"	3.48s	10' 7"	59' 2"	83
84	31' 10"	3.45s	10' 8 1/4"	59' 10"	84
85	31' 1"	3.42s	10' 9 1/2"	60' 5"	85
86	32' 4"	3.39s	10' 10 1/4"	61' 0"	86
87	32' 7"	3.36s	10' 11 1/2"	61' 7"	87
88	32' 11"	3.34s	11' 3/4"	62' 1"	88
89	33' 2"	3.31s	11' 1 3/4"	62' 8"	89
90	33' 5"	3.28s	11' 2 1/2"	63' 3"	90
91	33' 8"	3.25s	11' 3 3/4"	63' 10"	91
92	33' 11"	3.22s	11' 5"	64' 4"	92
93	34' 3"	3.20s	11' 5 3/4"	64' 11"	93
94	34' 6"	3.18s	11' 7"	65' 6"	94
95	34' 9"	3.15s	11' 8"	66' 1"	95
96	35' 0"	3.12s	11' 9 1/4"	66' 8"	96
97	35' 3"	3.09s	11' 10"	67' 2"	97
98	35' 6"	3.06s	11' 11 1/4"	67' 9"	98
99	35' 9"	3.03s	12' 1/2"	68' 4"	99
100	36' 1"	3.01s	12' 1 1/2"	68' 11"	100



## QUADRATHLON TEST SCORING TABLE (METERS)

Points	3 Jumps	SLJ	30m	OH Shot	Points	3 Jumps	SLJ	30m	OH Shot
1	3.00	1.00	5.80	4.00	51	7.04	2.36	4.38	12.58
2	3.08	1.02	5.77	4.17	52	7.12	2.39	4.35	12.75
3	3.16	1.05	5.74	4.34	53	7.20	2.41	4.33	12.92
4	3.24	1.08	5.71	4.51	54	7.28	2.44	4.30	13.10
5	3.32	1.10	5.68	4.68	55	7.36	2.47	4.27	13.27
6	3.40	1.13	5.66	4.85	56	7.44	2.50	4.24	13.44
7	3.48	1.16	5.63	5.03	57	7.52	2.52	4.21	13.61
8	3.56	1.19	5.60	5.20	58	7.60	2.55	4.18	13.78
9	3.64	1.21	5.57	5.37	59	7.68	2.58	4.16	13.95
10	3.72	1.24	5.54	5.54	60	7.76	2.60	4.13	14.13
11	3.80	1.27	5.51	5.71	61	7.84	2.63	4.10	14.30
12	3.88	1.30	5.49	5.88	62	7.92	2.66	4.07	14.47
13	3.96	1.32	5.46	6.06	63	8.01	2.69	4.04	14.64
14	4.05	1.35	5.43	6.23	64	8.09	2.71	4.02	14.81
15	4.13	1.38	5.40	6.40	65	8.17	2.74	3.99	14.98
16	4.21	1.40	5.37	6.57	66	8.25	2.77	3.96	15.16
17	4.29	1.43	5.34	6.74	67	8.33	2.80	3.93	15.33
18	4.37	1.46	5.32	6.91	68	8.41	2.82	3.90	15.50
19	4.45	1.49	5.29	7.09	69	8.49	2.85	3.87	15.67
20	4.53	1.51	5.26	7.26	70	8.57	2.88	3.85	15.84
21	4.61	1.54	5.23	7.43	71	8.65	2.90	3.82	16.02
22	4.69	1.57	5.20	7.60	72	8.73	2.93	3.79	16.19
23	4.77	1.60	5.17	7.77	73	8.81	2.96	3.76	16.36
24	4.85	1.62	5.15	7.94	74	8.89	2.99	3.73	16.53
25	4.93	1.65	5.12	8.12	75	8.97	3.01	3.70	16.70
26	5.02	1.68	5.09	8.29	76	9.06	3.04	3.68	16.87
27	5.10	1.70	5.06	8.46	77	9.14	3.07	3.65	17.05
28	5.18	1.73	5.03	8.63	78	9.22	3.10	3.62	17.22
29	5.26	1.76	5.01	8.80	79	9.30	3.12	3.59	17.39
30	5.34	1.79	4.98	8.97	80	9.38	3.15	3.56	17.56
31	5.42	1.81	4.95	9.15	81	9.46	3.18	3.53	17.73
32	5.50	1.84	4.92	9.32	82	9.54	3.20	3.51	17.90
33	5.58	1.87	4.89	9.49	83	9.62	3.23	3.48	18.07
34	5.66	1.90	4.86	9.66	84	9.70	3.26	3.45	18.24
35	5.74	1.92	4.84	9.83	85	9.78	3.29	3.42	18.42
36	5.82	1.95	4.81	10.01	86	9.86	3.31	3.39	18.59
37	5.90	1.98	4.78	10.18	87	9.94	3.34	3.36	18.76
38	5.98	2.00	4.75	10.35	88	10.03	3.37	3.34	18.93
39	6.07	2.03	4.72	10.52	89	10.11	3.40	3.31	19.11
40	6.15	2.06	4.69	10.69	90	10.19	3.42	3.28	19.28
41	6.23	2.09	4.67	10.86	91	10.27	3.45	3.25	19.45
42	6.31	2.11	4.64	11.04	92	10.35	3.48	3.22	19.62
43	6.39	2.14	4.61	11.21	93	10.43	3.50	3.20	19.79
44	6.47	2.17	4.58	11.38	94	10.51	3.53	3.18	19.96
45	6.55	2.20	4.55	11.55	95	10.59	3.56	3.15	20.14
46	6.63	2.22	4.52	11.72	96	10.67	3.59	3.12	20.31
47	6.71	2.25	4.50	11.89	97	10.75	3.61	3.09	20.48
48	6.79	2.28	4.47	12.07	98	10.83	3.64	3.06	20.65
49	6.87	2.30	4.44	12.24	99	10.91	3.67	3.03	20.82
50	6.95	2.33	4.41	12.41	100	11.00	3.70	3.01	21.00

**Additional Point:**

3 Jumps: 1 point for each 8cm above 11.00  
 SLJ: 1 point for each 3cm above 3.70

30m 1 point for each 0.03 below 3.01  
 OH Shot 1 point for each 7cm above 21.00

# **Coaching Youth to Throw the Hammer**

## **Section III. Seven Basic Steps in Coaching the Hammer Throw**

After introducing any of the seven basic steps in coaching the hammer throw, it is very helpful if the coach uses video analysis of technically correct models to contrast and reinforce the correct performance of key movements by his or her beginning throwers. The coach however must be careful in using videos of world-class throwers as models. Their far superior strength and speed enables them to hit certain positions unattainable by beginning throwers. Nevertheless the basic, elements shared by all top hammer throwers of straight arms and upper body relaxation, staying over the turning axis of the left foot, countering against the hammer with correct head and torso positions, and an arching, head back, hips and leg driven release, without falling off balance away from the turning axis leg, should be examined and hopefully internalized in the beginner's imaging process. The beginner can understand and replicate easiest the correct positions of a countering, head back release. Therefore, in careful progressive steps we build the technique of throwing the hammer beginning with Step 1.

### **1. The Release**

A bio-mechanically correct release, which flows from and is a product of correctly executed turns, will add approximately 15 to 20% to the total distance of a thrown hammer. An optimum release is achieved when The instant of maximum countering of the back of the thrower's head against the opposite pull the hammer marks the moment of maximal hammer speed and the release of the implement. A correct release flows naturally out of correctly executed turns.

#### **a. Aluminum bat, pipe, broom handle:**

Teach the release by having the thrower stand with his feet no more than shoulder width apart grasping the end of an aluminum baseball bat, a metal pipe, a wooden rod, or a shortened broom handle (a straw broom can remain on the end). The overall length of the implement should be about four feet.

For a right-hander thrower, grasp the bat/bar with a left hand under the right hand over grip similar to that used by golfers. The thrower, keeping his hips square to the front, turns his shoulders and head to the right and holds the bat/bar at approximately 290 degrees (See illustrations 1 and 7).



With both arms extended, elbows straight, the thrower slings/pushes the bat/bar around to the left with his hands and right side of his body while simultaneously rotating his feet and hips around to the opposite direction from that which he was originally facing. Throughout this entire movement the thrower's chin should be lifting with his head and shoulders going backward away from the end of the bat/bar. The implement leaves the hands when the hips and feet have rotated around to about 90 degrees, the hands have risen to approximately shoulder level, and the head and shoulders are leaning back from the sweeping pull of the end of the bat/bar so that without falling overly backwards onto the right foot the distance from the back of the thrower's head to the end of the bat/bar is at its maximum, and the thrower's line of vision is straight up looking at the sky. The thrower's hands finish high over his head after releasing the implement with both hands at the same moment (See illustrations 2 and 3).





3.

This critical element of the hammer throw should be practiced until the thrower makes every release with his head and shoulders back and his line of vision straight up to the sky away from the end of the bat/bar at the moment he releases the bat/bar. The thrower must rotate sufficiently so that the implement lands approximately in the center or somewhat to the left of center of the throwing sector.

#### **b. Medicine balls:**

The thrower can also master the release movement by the standing with an appropriately heavy rubber medicine ball (e.g. 4K girls; 5 or 6K boys) held between the hands at straight arms' length, with the thrower's back to a wall approximately four feet behind him. Keeping his hips and feet square to the front, the thrower swings the ball with straight arms to his right side with his line of vision following over the top of the ball and then slings the ball around and up to the left as he rotates his feet and hips around toward the wall, releasing the ball with the head and shoulders back and eyes up as previously described. The ball strikes the wall behind the thrower at a point a little above the thrower's head and to his left so that he can, immediately after impact, catch the ball in his raised hands and with straight arms rotate it back to where the previous throw began, then immediately repeat the subsequent releases establishing a flowing rhythm without pause until the set is complete. The thrower's line of vision remains above and with the medicine ball throughout the movement (See illustration 4).



4.

This movement should be practiced in 4 or 5 sets of 12 - 15 repetitions alternating the sets from right side to left side releases to maintain balanced body development and reinforce through both sides of the brain the correct mechanics of the movement.

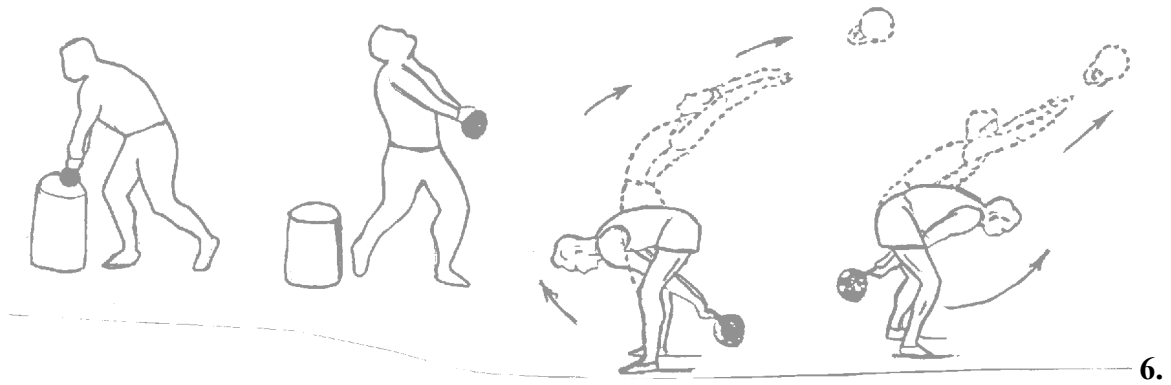
**c. Puds (e.g. 25# girls & 30# boys):**

Teach the thrower how to grasp the handle of the pud in the same manner he will grasp the grip of the hammer. Place the inside edge of the pud handle (and later the hammer grip) across the inside surface of the second knuckles of the gloved left hand. Then place the right hand over the left hand to prevent the handle/grip of the implement from slipping through the two overlapping hands. Many advanced hammer throwers use gymnastics/weightlifting chalk or resin to secure their hold on the grip thereby allowing them to concentrate more on a long relaxed arms  
(See illustration 5).



5.

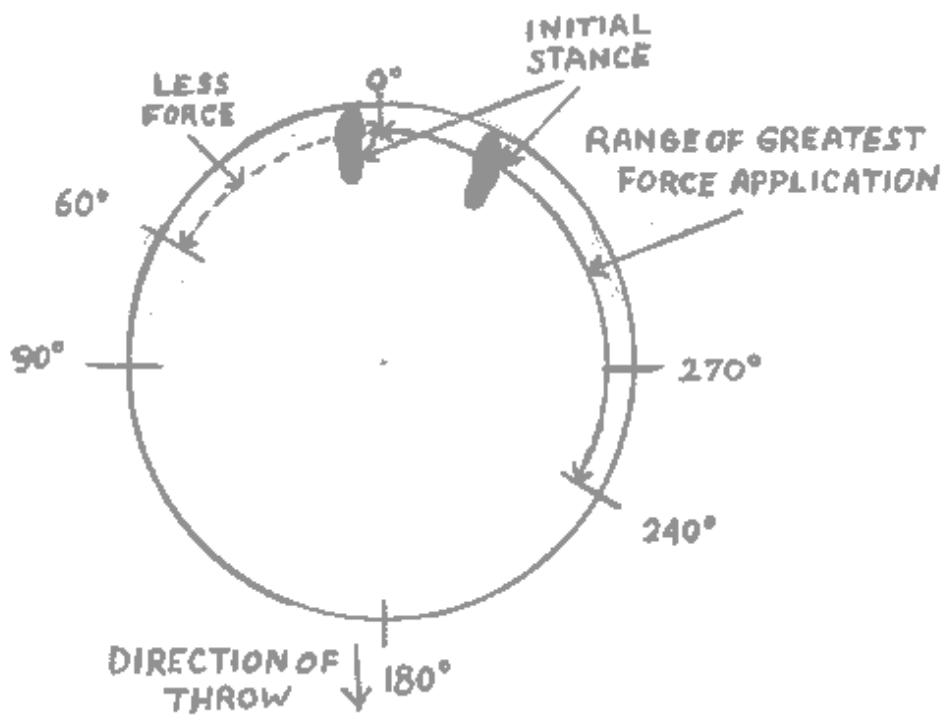
Using an appropriate weight pud, the thrower practices correct releases as previously described with the aluminum bat or metal bar, this time throwing from both sides, left and right, for balanced body development. It helps in these alternating left side right side drills to have protection on both hands. Other explosive throwing drills using puds should be part of youth strength training for the hammer throw (See illustration 6).



6.

## 2. The Preliminary Winds

The coach takes a safe position directly in front and at least 10 feet back from the thrower. In coaching correct hammer throwing technique, it is essential for the coach to understand and utilize specific circular geometric reference points for the orbital movement of the hammer and the positions of the thrower (See illustration 7).



7.

**a. Wind one:**

Grasping the grip of the hammer in both hands as previously described, the thrower stands at the back of the circle with his/her toes at the rim of the circle and feet straddling a chalk line which bisects the circle from 0 through 180 degrees. The hammer rests on the ground directly in front of the thrower between him and the coach. In the initial learning phase it helps to use a hammer 2 to 3 inches short of regulation length. The thrower's feet should be approximately shoulder width apart with hips and shoulders facing directly front.

The thrower then lifts the hammer from the ground and places it again on the surface of the circle approximately one foot to the right and a foot behind his right foot. In placing the hammer thusly, as the thrower turns his shoulders to the right, he should lower his left shoulder, keep his hips and right foot facing front, and keep the majority of his weight on his bent left leg. The vertical and horizontal lines mark the fixed turning axis of the throw (See illustration 8).



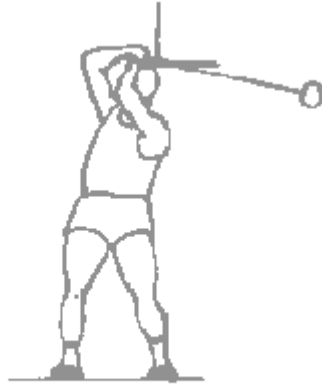
**8.**

From this position the thrower pulls the hammer with both hands from the ground and strokes it, not steeply, across the front and well out to the left and around the left foot, attempting to keep the left shoulder slightly lower than the right. This will prevent the serious winding technical error of dropping the right shoulder and raising the left shoulder in the preliminary winds. Both feet and hips remain facing front throughout this stroking phase of the wind. (See illustration 9)



**9.**

With the right heel rising slightly as the hammer approaches its apex. The thrower's legs and hips must not sway to his right or drop as the hammer sweeps up and around the left. During the first wind the thrower remains erect and centered in the hammer's orbit. As the hammer swings around to the back, the thrower's hands clear the top center of his head by a few inches, and the right wrist rolls over to the top of the left. The thrower keeps his left shoulder slightly lower than the right (See illustration 10).



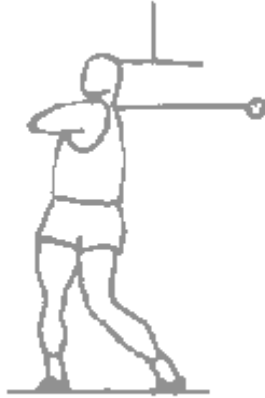
10.

In first attempting to learn to wind the hammer, it is sufficient that the thrower simply stand with his shoulders and hips facing forward after he has pulled the hammer from the ground behind him and simply attempt to wind it in a smooth orbit around the body with both arms extending to their full-length as the hammer passes the low point at zero degrees. After the thrower has become comfortable with this basically simple straightforward wind with arms and shoulders long and relaxed in the front (usually the first day of instruction), it is then time to introduce the critical technical subtleties of the first preliminary wind.

When the hammer reaches its apex in the first wind, the thrower turns his head and shoulders to the right and draws his right elbow back. Both feet and hips remain facing straightforward with the straight right foot now flat on the ground creating a block, which prevents the body from swaying, and creates a torque between the hips, which remain straight, and the shoulders which have turned to the right to meet the hammer as it descends toward its low point. The left upper arm brushes in close to the thrower's face and chest as his right elbow draws back.

(See illustration 11).





11.

The hammer's low point will be approximately half way between the front of the right foot and zero degrees (See illustration 12).



12.

**b. Wind two:**

The thrower again strokes the hammer through its low point, sweeps it fairly flat across the front with both arms fully extended before the hammer reaches zero degrees. The plane of the hammer must reach well to the left as the hammer orbits around the left foot. The hands as they clear the top of the head will now be to the left of the thrower's head (See illustration 13). The thrower again keeps his left shoulder lower than his right, his feet and hips square to the front, his body erect and centered with minimal hip sway, and repeats the subsequent hands, shoulders and arms positions as employed in wind one. Each subsequent preliminary wind is a replication of wind two. Practicing winding should be restricted to sets of four or five winds because the low point has a tendency to move increasingly to the left with each new wind, and preliminary winds become ineffective when the hammer moves to far left of zero degrees.



13.

**c. The entry wind:**

It needs to be noted here that when the thrower is ready to attempt the entry wind into turn one (usually off the second wind) or the two winds release drill (next), the hammer will be stroked faster from the high point with the shoulders turned less to the right than on wind one in order to assure that the low point hits zero degrees.. As the hammer drops, the thrower drops from an erect to a bent knee position.

(See illustrations 14 and 15)



14.



15.

Four factors increase the acceleration of the hammer from the winds into the entry: 1. Stroking the hammer across the front with both hands and the right side of the body with long relaxed shoulders and arms; 2. Maintaining torque in the right hip by keeping the feet and hip axis squared to the front; 3. Dropping to bent knees in wind two with the descent of the hammer from its apex; and 4. Countering the hips back against the pull of the hammer. The hammer's low point should be at zero degrees approximately 4"– 6" inches above the ground as the hammer is pushed past zero and well out to the left and around the left foot. The thrower's line of vision is above the hammer and

his head, shoulders, and arms are relaxed and passive and not leading the hammer into the first turn.

### **3. Two Winds and Release**

The thrower stands with his heels approximately a foot back from the front rim of the circle with his feet equally straddling the line that bisects the circle. He executes two winds as previously instructed. After the first, slower wind, the hammer is significantly speeded up in the second stroke across the front and in the back half of the second wind as previously described. The thrower slings the hammer across the front and up with his legs, hips, rotating feet, and arching back driving the hammer into a release that replicates the positions taught in The Release drills. The coach can expect to spend the first five days teaching the release, the preliminary winds, and the release off two winds.

### **4. Turning Without the Hammer**

Using a stick or an aluminum bat, the coach demonstrates slowly, in segments, a series of 3 or more technically correct, complete 360 degree turns on the heel of the left foot and ball of the right foot with knees tightly together and the right foot lifting over the left ankle to touch down and the completion of each turn. Once the coach has demonstrated and explained the segmented moves of a series of heel-toe turns, he tells the thrower that he will learn one turn in segments until he masters the positions to be able to complete one correct heel-toe turn followed by a series of heel-toe turns.

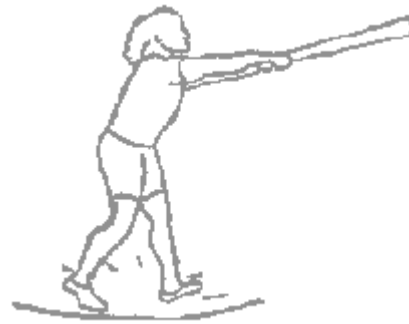
The coach draws a straight line with chalk bisecting the circle or on the throwing surface without a circle. Gripping an aluminum bat or bar as described in The Release, the thrower stands straddling the line with his back to the throwing area. The coach must stress that the thrower not look down at his feet in this learning process but keep his head erect and eyes at horizon level. The thrower must learn to turn without looking down to his feet or the ground as visual crutches to help maintain his balance. Looking down at the ground or the feet shortens the effective radius of the hammer and results in shorter throws.

#### **a. The coach instructs the thrower:**

To hold the bat straight out from his torso with fully extended arms and concave shoulders so that the end of the bat is about knee height and the thrower's line of vision is aligned with, but also above the end of the bat.

To keep his feet and hips straight forward, then turn his head shoulders and straight arms to the right so that he feels torque in his right hip from the turning of the shoulder axis and arms to the right. The bat should be extended from straight arms out to the thrower's right side a little below knee height.

To then push the bat across the body with feet rotating simultaneously on the heel of the left foot and the ball of the right foot, the head erect and the line of vision above the top of the bat. When the bat reaches 90 degrees and about shoulder height, the thrower steps with his right foot to a spot three inches in front of his turned left foot. Completing this step with the right foot in front of the left foot will automatically bring the thrower's weight from his left heel down on the ball of his left foot (See illustrations 16 and 17). The thrower must complete this push of the bat, the heel turn, and step with his shoulders level and line of vision above the bat. It should be repeated until is performed correctly with balance on both feet at its completion.



16.

Next the coach marks a spot with chalk about 6 inches more on an angular arc behind the thrower to which his right foot will step in a methodically learned progression of identical but longer right foot steps to ultimately complete a full 360 degree heel toe turn (Illustrations 17 and 18). At the completion of each of these stepping segments of a full turn, the thrower must keep his knees closely together, step over the left ankle, and stay balanced primarily on the rotating left foot.



17.



18.

Learning the turns through this sequential drill using a bat, straight bar, or broom handle takes 3 to 5 days depending on the individual thrower's innate coordination. However, any able-bodied athlete can learn the heel-toe turns with this approach. (Caution: If the thrower experiences vertigo at any time in the process of learning one or multiple turns, explain that it is normal to experience dizziness when learning to throw the hammer. Point out that dancers, figure skaters, and circus performers also have experienced dizziness in the initial stages of their training. It passes with gradual, progressive practice. Be sure to give the thrower adequate time to recover his equilibrium between drills. If the thrower manifests extreme discomfort or dizziness, stop the turning drills for that training session.

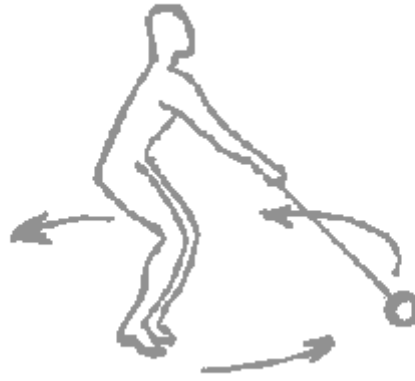
Do not have the thrower attempt to throw the hammer off 1 or 2 turns. Reserve introducing the release until the thrower is able to make at least 3 heel-toe turns with the bat. At that point slide a 2 1/2 to 5 pound Olympic barbell plate down over the handle of the aluminum bat to a spot where the thickness of the barrel of the bat will stop the plate. This increases the weight of the bat making it more hammer-like for facilitating a release off the final turn. Now the thrower can practice two or more turns with correct footwork and head and shoulder positions, and the effective release he learned in step one.

## 5. Turning With a Shortened Hammer or Training (soft landing) Hammer

### a. The walk-around drill with turns and release:

The thrower stands on a cement slab facing his coach. The thrower grips the hammer (2 inches short) as he did for the preliminary winds and places it on the surface to his right and slightly behind. With shoulders relaxed and extended and both arms straight, the thrower begins to walk in a circle on the balls of his feet, kept closely together and with his knees slightly bent. He rolls the hammer over the ground in a circle slightly behind him. By the time he finishes one 360-degree revolution, the hammer will have taken off the ground like a slowly rising airplane. Maintaining long straight relaxed arms with his head erect and his line of vision over the top of the hammer, the thrower increases his walking speed on the balls of his feet, rotating his body in circles, keeping the flight of the hammer low and flat. His hips, shoulders, straight

arms, and line of vision should be aligned with the hammer. There is no dragging the hammer behind. As he turns faster, the thrower will feel the increasing pull of the hammer against which he should counter with his hips and slightly bent legs. That is the feeling the thrower should experience when turning with heel toe turns (See illustration 19).



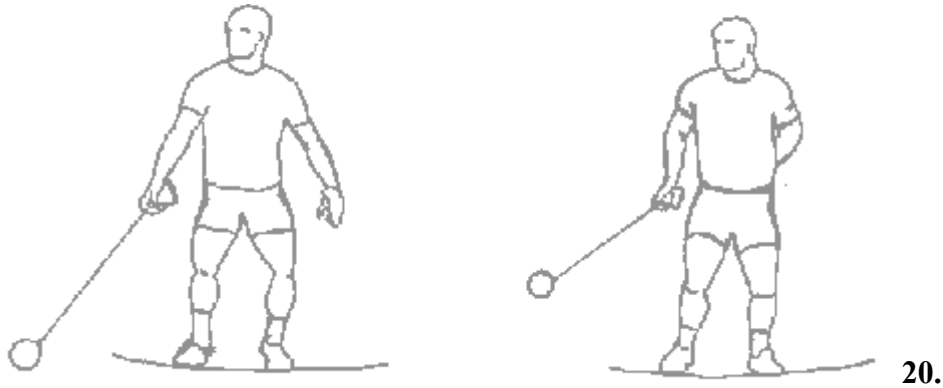
19.

After sufficient practice of the walk-around drill with straight arms, erect head, and relaxed shoulders have the thrower make three or four walk-around turns, and at the appropriate moment when he knows he is coming around to face the coach, he should transition from walking around on the balls of the feet to making heel-toe turns as he previously learned with the bat or broom stick. The thrower relaxes, lets the hammer rise, not too high, in the back half of the turn, at 180 degrees, and at the end of three or more heel toe turns, he releases the hammer as he has learned previously.

**b. The wrap around drill with turns and release:**

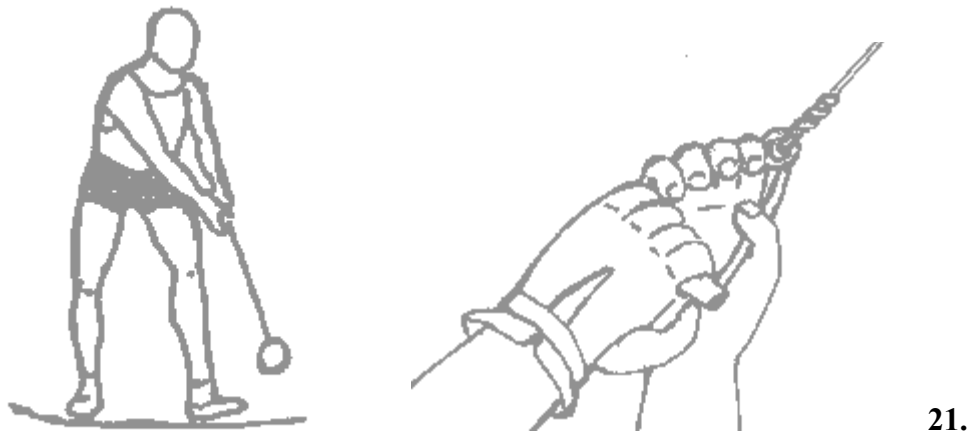
The thrower stands facing the coach with the grip of the hammer in the upturned palm of his right hand, the narrow end of the grip and its attached looped wire extend out between the thumb and the first finger. The wide end of the grip rests on the heel of the thrower's hand (See illustrations 20 and 21).

The hammer (2 inches short) is set on the ground behind and to the right of the thrower's right foot. The thrower pulls the hammer from the ground with his right hand, strokes it low across his body and out to the left side where he inserts his left, gloved hand into the hammer grip and passes the hammer with his left hand behind his body as he remains standing with knees slightly bent, hips square to the front, and his head and shoulders turned slightly to the right (See illustration 20).



With his right hand meeting his left hand behind his back, the thrower's right hand grasps the hammer grip at its base as described previously just before he releases the top of the handle with his left hand.

Again the thrower strokes/pushes the hammer across the front with his right hand as he did before, then releasing it when his left hand has grasped the top of the grip (See illustration 21). This exchanging the hammer grip and hammer from hand to hand around the thrower's static body in the manner described is the wrap around drill. When the hammer passes across the front, the thrower should extend his straight right arm and extend his shoulders to make a large radius so that he can feel the outward pull of the hammer against which he can begin to counter. When the thrower is comfortable with the wrap around drill, move immediately to the regulation length hammer.



After approximately 3 wrap-arounds the thrower should feel sufficient control and rhythm to push the hammer hard across the front with the right hand and right side of his body while simultaneously beginning to turn on the left heel and the ball of the right foot. At approximately 80 degrees the thrower inserts his left hand into the handle and quickly places his right hand over his left hand as he goes into the back half of the turn. The thrower continues to make a series of heel- toe turns keeping his arms and shoulders long and relaxed. By the completion of turns 3, 4 or 5 the countering of the thrower's head and

shoulders will have increased the speed and pull of the hammer sufficiently so that the thrower can exert the head-back, countering release he has earlier been taught.

## **6. Integrating the Preliminary Winds into the Entry and Turns**

Warm up: 6 – 8 wrap around drills with turns and releases using the regulation length hammer.

### **a. Winds/turn; winds/turns drill and release:**

The thrower makes two relaxed and a fairly slow preliminary winds, pushes the hammer, not too fast, across the front into a wide orbit around the turning left leg executing one heel toe turn and stops the movement of his feet after the right foot touches down at the completion of the turn. Immediately execute two more winds and another single heel-toe turn, repeating this drill across the throwing surface until 3 or 4 winds/turn, winds/turn sequences have been completed. Throughout, the thrower must stay centered and on balance. If the thrower loses his balance when he stops his turn after the winds, he should execute as many additional preliminary winds as he needs to resume his balance before proceeding with the remainder of the 2 winds/1 turn/stop drill.

When the thrower can successfully repeat the 2 winds/1 turn drill, he may proceed to the following advanced application of this drill:

2 winds/1 turn/stop, 2 winds/1 turn/stop, 2 winds/2 turns/release.

2 winds/1 turn/stop, 2 winds/2 turns/release.

2 winds/1 turn/stop, 2 winds/three turns/release.

These drills train the thrower to keep his balance and his axis of rotation in the center of the hammer's orbit. He must never bail out and stop the movement of the hammer once the drill begins. If he loses his balance, he steadies himself by continuing to wind and even walk back to his starting point while winding until he resumes the necessary balance to complete the drill. During this drill the throwers back must remain in a straight position, not rounded and humped over giving too much the pull of the hammer.

With additional practice of the wrap-around/turns/release drill using a regulation hammer, and the successful accomplishment of the winds/turn/stop, and the winds/turns/release drill, the thrower is ready for:

## **7. The Regulation Throw** (See the thrower's illustrated handbook).



## Section IV. Three Weeks to Throwing the Hammer

### A. Sample Training Plan for Introducing Hammer Throwing

This day-by-day recommendation for introducing hammer throwing is described for one thrower. It can be expanded to instruct a larger number of beginning throwers given additional equipment and training space. The workouts can be augmented by general fitness and/or resistance training exercises as determined by the coach. The coach should also modify the timeline for introducing the essential movements of hammer throwing, depending upon the individual athlete's response in effectively acquiring these motor skills.

#### 1. Week One

##### a. Monday:

- After a fifteen minute warm up of at least a 400 meters jog and moderate stretching, the thrower takes a minimum of 12 releases using an aluminum baseball bat, a metal pipe, wooden rod, or broom, following the instructions in step 1 The Release (pp.11-13) of the coaches' manual. The coach checks carefully for correct positions.
- Medicine ball releases. Ideally, go to a wall where 2 or 3 throwers can practice medicine ball releases at once as described on p. 11 of the coaches' manual. The thrower takes three sets of 12 left and right-sided releases.

##### b. Tuesday:

- After warm up repeat Monday's releases with aluminum bat, etc. for 15 releases.
- 15 pud releases from left and right side.

##### c. Wednesday:

- Warm up, followed by the coach's demonstration of the key elements but not the fine points of the wind (pp. 15-17).
- Introduce the preliminary winds using a hammer or soft landing hammer 2 inches shorter than regulation length. Teach the thrower to wind in 6 sets of 4 winds from both the left side and right side staying centered in the hammer's orbit with minimum body sway, straight, relaxed arms in the front, and with the low point hitting zero degrees.
- Teach the thrower the wind, walk drill. Take two winds then when the hammer winds left, step forward one step with left foot, when the wind

is to the thrower's right, take the step with the right foot. 2 sets of 15 steps, right handed and left-handed winds.

- 8 pud releases, left-handed and right handed.

d. Thursday:

- Warm up, followed by 15 releases with baseball bat or other rod like implement.
- Repeat Wednesday's winds drill.

e. Friday:

- Warm up, followed by medicine ball releases 3 sets 15, from left and right side against a wall
- Introduce the second wind (pp.18-19). Practice 6 sets of 4 winds with 2, 3, and 4 being the same technique to keep the low point at 0 degrees.
- Six pud releases from left and right side.
- Introduce 2 winds and release (p. 19). The thrower repeats this drill 8 times from the dominant side only.

f. Saturday:

- Warm up followed by 4 sets of 15, step wind drills, 2 left-handed and 2 right-handed.
- 5 sets of 4 winds each side.
- 15 times 2 winds with release throws. Dominant side only.

## **2. Week Two**

a. Monday:

- Warm up. Immediately follow with 3 sets of 4 winds, each side, using two-inch short hammer.
- With an aluminum bat, stick, bar etc. The coach demonstrates in segments a correct heel-toe turn (pp. 19-21).
- Thrower practices a heel toe turn/s as described (p.21), taking at least 20 repetitions of the heel toe and step movement to get around to 180 degrees.
- 10 releases with bat or broom etc.
- 10 times 2 winds with release

b. Tuesday:

- Warm up, followed by the wind, walk drill, 2 sets, 15 steps, both left and right sides still using two-inch short hammer.

- Using a bat, or broom, etc. thrower practices segmented turns then consecutive flowing heel toe turns
- When the thrower can perform 3 turns with a good release, add a 2 ½ or 5-pound Olympic plate down the shaft of the aluminum baseball bat and have the thrower practice multiple turns with the added weight until he/she can comfortably complete sets of three consecutive turns or more.
- Using at 2 or 3 turns with the weighted bat or broom, the thrower takes twelve throws with a final release.

c. Wednesday:

- Warm up, followed by 3 sets, 4 winds, each side, introducing regulation length hammer.
- Practice multiple turns with the weighted, bat or broom etc. to establish a fluid rhythm in performing heel toe turns. Practice 20 minutes to achieve 3 or 4 balanced, consecutive turns.
- Using a minimum of three turns, the thrower throws the baseball bat twelve times with a correct release.
- Medicine ball releases, three sets 15, both sides.

d. Thursday:

- Warm up. Practice winds, 3 sets, of 4 winds, left-handed and right handed. Regulation length hammer.
- Follow with the walking winds drill. Three sets, 15 steps, dominant side winds only.
- Teach the thrower the walk around drill (p. 21) using two-inch short hammer or soft landing hammer.
- Integrate three or more heel toe turns off the walk around drill. Repeat 10 times, no release.
- 8 pud releases both sides followed by eight overhead backwards and forwards throws.

e. Friday:

- Warm up. Practice winds, 10 minutes. Regulation length hammer.
- 3 or more turns off the walk around entry. Repeat six times.
- Three turns off the walk around entry with a release. Repeat 10 times

f. Saturday:

- Warm up. Practice 3, 4 or more turns off the walk around entry, 10 minutes.
- Off the walk around entry, take three turns with a release. Repeat 12 times.

- Introduce the wrap around drill with no turns (pp. 22-23) using a two-inch short hammer.

### 3. Week Three

#### a. Monday:

- Warm up. Practice winds, both sides, 10 minutes.
- Wrap around drill without turns. Practice fifteen minutes.
- Walk around entry to 3 or more turns with a release. Practice 8 times.
- Wrap around drill with transition into 3 or more turns. Repeat 15 times.
- Pud releases. 5 times from both sides and 5 over the head throws.

#### b. Tuesday:

- Warm up practice winds, dominant side only, 10 minutes.
- Walk around entry to 3 or more turns with the release. Practice 4 times.
- Wrap around drill with transition into 3 turns with a release. Repeat 15 times (p. 21).

#### c. Wednesday:

- Warm up.
- Repeat Tuesday's workout but introduce regulation length hammer into walk around and wrap around drills with release.

#### d. Thursday:

- Warm up. Practice winds 12 minutes, both sides.
- Wrap around drill with transition into 3 turns with release. Repeat 10 times.
- Introduce 2 winds/1 turn/stop drill. Repeat 10 times without release (p.24).
- Introduce 2 winds 1 turn stop, 2 winds/1 turn/stop, 2 winds/2 turns and release. Repeat six times if the thrower is ready.

#### e. Friday:

- Warm up. Practice winds. 2 sets of 4 winds, both sides.
- Wrap around drill into 3 turns and release. Repeat 6 times.
- 2 winds/1 turn/stop, 2 winds/1 turn/stop, 2 winds/1 turn and release. Repeat 4 times.
- 2 winds/ 1 turn/stop, 2 winds/2 turns release. Repeat 4 times
- 2 winds/ 1 turn/ stop, 2 winds/ 3 turns and release. Repeat 8 times.

f. Saturday:

- warm up.
- 2 winds/ 1 turn/ stop, 2 winds/ 2 turns and release. Repeat 4 times.
- 2 winds/ 1 turn/ stop, 2 winds/ 3 turns and release. Repeat 4 times.
- 2 winds/ 3 turns and release. Repeat 12 times (regulation throw).

## **Section V. Basic Principles of Hammer Throw Training**

A. Contemporary hammer throw training is based on the following basic principles:

### **1. Individuality**

Each athlete reacts to training stimuli differently. Accordingly, a training plan should be specifically adapted to the athlete's physiology and strengths in order for the athlete to obtain the most from the program.

### **2. Change**

The athlete's body improves by adapting to the stimuli provided to it during training sessions. After the body fully adapts to a prolonged, fixed sequence of training stimuli, it is necessary to change the stimuli in order to provide the body with new stimuli to adapt to. This process over the span of the block of 40 to 60 training sessions produces incrementally longer hammer throwing distances.

### **3. Intensity**

The intensity of all exercises plays a key role in their effectiveness. Keep in mind, however, like other aspects of training, the intensity of training should also be determined by the athlete's response. Different athletes learn better at different intensities. The coach and athlete should also pay attention to how the athlete's body reacts during training. If an athlete's fatigue is affecting technique, speed, and maximal throwing distances in training, a lower intensity for all throwing and exercises should be used.

### **4. Specialization**

Exercises should be used that most closely mimic the competition movement. This allows for simultaneous development of power and technique. Training power and technique separately is not as effective.

### **5. Regularity**

The regularity of your training and rest schedule is as important as the training plan itself. Once a weekly schedule for training is determined, the athlete should stick to it. Frequently changing the number of training days per week

confuses the body. It is also necessary to complete the set of exercises in the exact order each training session. This includes throwing, weight training, lifting, jumping, sprinting, and all other exercises. It is necessary in order to better adapt to the exercises and to more precisely track performance gains and losses. Rest days are often an overlooked part of the weekly training schedule. These necessary days help the athlete recover from training loads and gain from the previous days' trainings.

#### 6. **Volume**

The volume of throws amassed in training is important, but not quite as important as the quality of training. Ten quality throws is preferable to thirty throws with poor technique that engrains poor technical habits. After saying that, however, it is important that athletes try to obtain as much volume as possible. Athletes, especially beginning hammer throwers, will need many practice turns and throws to develop top form.

(For a detailed explanation of how these principles are used to develop an effective hammer throw training program, please refer to Martin Bingisser's article, *Introduction to Block Training*, which can be found on [www.hshammer.com](http://www.hshammer.com) and [www.hammerthrow.org](http://www.hammerthrow.org))

### **Section VI. Additional Resources**

(All available from: [www.springcoathletics.com](http://www.springcoathletics.com) 1-800-383-0305)

#### A. Books

The Throws Manual, George Dunn and Kevin McGill. \$16.50.

#### B. Videos

Hammer Video, Iouri Sedykh. \$59.95

#### C. Web Sites

<http://www.hammerthrow.org>

<http://www.geocities.com/colosseum/8682/>

<http://www.throwfarther.com>

<http://www.hshammer.com/>

<http://www.hammerthrowing.co.uk/>

<http://hammerthrow.wz.cz/>

<http://www.hammercircle.co.uk/>

<http://www.hammercenter.com/>

<http://www.xs4all.nl/~mwijand/Hammer/english.html>

<http://www.collegehammer.com/>

<http://www.welshathletics.org/coaching/hammer01.htm>