

Ultraweights Supplement: 98, 200 and 300 lb Implement Specifications and Throwing Rules Manual



PREPARED FOR THE USATF MASTERS TRACK & FIELD THROWING EVENT COMMITTEE
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2009- revision 12/14/2008

PRICE \$3.00

This manual is part of the USATF National Officials Monograph Series on how to officiate. Each monograph covers the various techniques for each officiating assignment. These monographs are intended for more in depth understanding of each job. They are intended for both the novice and seasoned official. They cover the real details of the job and how it should be preformed. They summarize various techniques to accomplish the job. These monographs can be copied and used for officials training only.



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DEDICATION

This manual is dedicated to all the people who were the early competitors of the heavy throwing weights; particularly the "Irish Whales" of the New York Athletic Club who threw many different throwing weights.

To The Great Bob Backus of Massachusetts, who was an inspiration to this event with Championship performances in the weight and superweight (56 lb) during the 1950s and 60s.

To Chuck Klehm of Arlington Heights, Illinois who introduced and contested the 98, 200 and 300 lb weights during the 1980s.

To Ken Weinbel of Seattle, Washington who held ultraweight pentathlons in Seattle for 15 years and was one of the facilitators in helping the event gain National Championship status.

Also to Ray Feick, PA, Lee Slick, IL, Pay Carstensen, FL and Vince Breaux, LA for staging many competitions over the years and helping the development of the event.



INTRODUCTION

The ultraweight pentathlon has slowly developed and evolved over the last 25 years into our current understanding of the event: the weight and super weight throw plus the next three heavy weights. In some age groups the next three weights include one, or up to all three implements of 98, 200 and 300 lb. Up to this point there has only been a loose set of rules for how to throw and officiate the event. Additionally, USATF has recently recognized the ultraweight pentathlon as a National Championship competition. The recent ultraweight national championships have underscored the need for codified and approved rules regarding the construction of the implements, the nature of the throwing area, and the officiating of the event. Consideration for commonality with the other existing rules for the throwing events, practicality and ease of officiating were very important in this undertaking. As these rules were not completed in time to be considered for inclusion in the main USATF rules book at the 2008 annual meeting, this Monograph has been prepared as an interim measure for the express purpose of disseminating a uniform standard to the throwing community on a national level.

The ultraweights are not commercially available, except in individual component pieces. See the resources section of this manual. This manual provides the design specifications for building custom implements.

The rules take inspiration from the Scottish Highlands games in the use of a throwing square, rather than a circle. This was done for simplicity, practicality, and ease of building a portable square that can be transported from competition to competition. The basic structure of the rules strongly parallels those of the hammer and weight throws to minimize errors in interpretation.

Also provided herein are the officiating rules, particularly as they apply to the marking of an ultraweight throw (98, 200 & 300), and scoring the ultraweight pentathlon event.

This manual was prepared for the Rules Subcommittee of the Masters Track & Field Committee of USA Track and Field for the use, education and training of ultraweight throwers and officials. As such, it is copyrighted for the use of USATF members.

Additional copies are available by downloading them directly from <http://www.usatfofficials.com/training/ultraweight2009.pdf>. Comments and recommendations are welcome and can be sent to George Kleeman 5104 Alhambra Valley Rd., Martinez, CA 94553-9773 or via E-mail at george_kleeman@comcast.net.

This manual is intended as a “how to” book for the building of the required equipment, and the running of an ultraweight pentathlon event. It is an attempt to get more uniformity in the conduct of ultraweight competitions throughout the United States.



GENERAL RULES

The general field event rules (USATF Rule 180) shall apply and are not repeated herein.

THE ULTRAWEIGHT PENTATHLON

The rules of USATF Rule 202 apply.

Ultraweight Pentathlon Scoring: The following two tables provide the required age factor corrections for scoring the ultraweight pentathlon. All throws with the five age-specified weights are age-factored back to 35# throws for Men and 20# throws for Women as those events that have IAAF scoring tables. Age factored performance (afp)= actual performance * age factor

The Age Factored Performance (AFP) is rounded back to the shorter centimeter, then scored with 1985 IAAF Weight Scoring Tables using the following formula:

$$\text{Points} = (a) * (((\text{Age Factored Performance}) - b)^c)$$

where Men: a=47.8338, b=1.5, c=1.05; Women: a=52.1403, b=1.5, c=1.05

The individual points from each event are then added up to yield the overall pentathlon score.

Sample scoring spreadsheets, which provide all corrections and calculations, are available on the USATF website. Required entries are: Age, Gender (M or F), and performance (in meters) in each of the five proper events for that age group.

Ensure that each person throws the proper weights for their age group and throws them in the proper order: light to heavy.

If six throws per implement are given in a competition, only the first three count for the Pentathlon. Any throws beyond the first three are not part of a legal Pentathlon.

In 2010, the WMA will revise the Throws Pentathlon scoring table, which will cause a change in the Ultraweight Pentathlon scoring table, and will require rescoring of all scores made previous to the change.



Age Factored Performance Scoring Table

Men's Age Factors Corrected to the 35# Weight

Age	12#	16#	20#	25#	35#	44#	56#	98#	200#	300#
30					1.0000	1.3158	1.6129	3.3333	7.1429	12.5000
35					1.0252	1.3490	1.6536	3.4175	7.3232	12.8156
40					1.0943	1.4399	1.7650	3.6477	7.8166	13.6790
45					1.1734	1.5439	1.8925	3.9113	8.3813	14.6672
50				1.1123	1.2647	1.6641	2.0399	4.2158	9.0339	15.8093
55				1.2105	1.3829	1.8196	2.2305	4.6096	9.8778	17.2861
60			1.1392	1.3282	1.5393	2.0254	2.4827	5.1310	10.9949	
65			1.2615	1.4710	1.7356	2.2836	2.7993	5.7852	12.3969	
70		1.2943	1.4131	1.6738	1.9892	2.6174	3.2084	6.6308		
75		1.4735	1.6524	1.9554	2.3297	3.0654	3.7576	7.7658		
80	1.5730	1.7058	1.9892	2.3509	2.8109	3.6985	4.5337			
85	1.8648	2.1197	2.4986	2.9470	3.5425	4.6611	5.7137			
90	2.2895	2.8109	3.3584	3.9481	4.7889	6.3012	7.7240			
95	2.9647	4.1710	5.1208	5.9792	7.3886	9.7218	11.9171			
100	4.2049	8.0812	10.7750	12.3143	16.1625	21.2664	26.0685			

Women's Age Factors Corrected to the 20# Weight

Age	12#	16#	20#	25#	35#	44#	56#	98#
30			1.1699		1.9829	2.4891	3.1619	5.5710
35			1.2752		2.1614	2.7132	3.4465	6.0724
40			1.4014		2.3753	2.9817	3.7876	6.6733
45			1.5554		2.6363	3.3094	4.2038	7.4067
50		1.2414	1.7481	2.1582	2.9630	3.7195	4.7247	
55		1.3601	1.9265	2.3784	3.2653	4.0990	5.2068	
60	1.2741	1.5080	2.1455	2.6487	3.6364	4.5648	5.7985	
65	1.4307	1.6978	2.4205	2.9883	4.1026	5.1500	6.5419	
70	1.6312	1.9424	2.7765	3.4277	4.7059	5.9074		
75	1.8972	2.2692	3.2552	4.0187	5.5172	6.9259		
80	2.2667	2.7283	3.9333	4.8560	6.6667	8.3688		
85	2.8149	3.4203	4.9684	6.1339	8.4211	10.5711		
90	3.7131	4.5825	6.7429	8.3245	11.4286	14.3465		
95	5.4529	6.9412	10.4889	12.9492	17.7778	22.3168		
100	10.2609	14.3030	23.6000	29.1358	40.0000	50.2128		



THE IMPLEMENTS (98, 200 & 300 lb)

The ultraweight pentathlon uses five implements, which are determined by the age and gender of the athlete. Among the choices are the weights which range from 12 - 56 lb, which are defined in USATF Rule 195; these are not addressed herein. The remaining document focuses only on the 98, 200 and 300 lb weights.

1. Construction: The ultraweight shall consist of three parts: a main body, a handle, and a connection assembly. See Figure A-1.

2. Main body: The main body should be a solid cylinder.

(a) The cylinder shall be made of a material no softer than lead. An outer casing, such as an steel pipe, may be used, provided the length and diameter specifications are maintained.

(b) The diameter of the cylinder shall not exceed 26.7 cm (10.5 in) nor be less than 15.25 cm (6 in).

3. Handle: The handle shall be made of a round steel rod, not to exceed 1.25 cm (0.5 in) in diameter, bent in a triangular shape so that no side exceeds 20 cm (8.0 in) inside dimension. A handle shall have two sides of equal length and the third side (handle) of more than or equal length. When the overall length of the implement is measured, the equal sides must form the sides of the triangle. The handle must be rigid and not show evidence of elasticity or malformation after being thrown. It is recommended that handle be replaceable (recommend removable anchor shackle connection) under official supervision if a failure occurs during competition. An example of a suitable handle is shown in Figure A-2.

4. Connection Assembly: The main body shall incorporate a permanent eye bolt, u-bolt or shackle in its construction (stainless steel recommended), which may swivel. The handle should be connected by means of a removable shackle or link(s) (stainless steel recommended). No more than two links shall be used (in addition to the handle anchor shackle and the main body connection). An immovable handle is not recommended.

5. Length: The overall length of the complete implement, from the bottom surface of the main body to the inside surface of the handle (grip) shall not exceed 45.75 cm (18 in).

6. Specifications: The ultraweights shall conform to the following specifications:

Implement	98 lb	200 lb	300 lb
Minimum Weight (kg)	44.50	90.80	136.10

Since most officials organizations will not have a scale of sufficient capacity to weigh these implements, the event management should make arrangements to have the implements weighed prior to the event by an outside source. Weighing services should be sought from an establishment that can prove its scale's calibration is traceable to NIST, and the measurement accuracy is no greater than ± 50 grams (± 2 ounces).



A certificate attesting to the calibration of the scales used and exact weight of the implements being used in a competition must be presented to the head inspector of implements prior to the start of competition.

THE THROWING AREA (for 98, 200 & 300 lb implements)

The following rules are for the 98, 200 & 300 lb implements.

1. Construction: The Ultraweight shall be thrown from a square that is made of bands of iron, steel or other suitable material, and painted white. The square may be sunk flush with the surrounding ground or installed on top of the ground; the latter case being allowed for ease of transportation and storage of the hardware, as well as providing the ability to assemble the square so the front side is even with the edge of the concrete or other slab. If it is installed on the surface of the ground, provisions should be made that allow securing of the square to eliminate movement for the duration of the competition.

The surface surrounding the square may be concrete, synthetic, asphalt, wood or any other suitable material. The surface within the square shall be constructed of concrete or similar material. The throwing field shall be level with the surface within the square.

2. Dimensions: The inside dimensions of the square shall measure 2.135 m (7 ft) on each side. The metal square bands shall be 5 cm (2 in) wide, and 20 mm ($\frac{3}{4}$ in) thick; that is, the top surface of the square shall be 20 mm above the surrounding ground. However, the width of the bands may be increased if this assists in bolting or otherwise fastening the square to the ground.

A drawing of the square, projection lines and sector lines is shown in Figure A-3. Pictures of a sample throwing square are shown in Figures A-4 and A-5.

3. Projection lines: A line 5 cm (2 in) wide shall be drawn theoretically through the center of the square, extended no less than 75 cm (30 in) on each side, to designate the front and rear halves of the square. The extensions outside the square should be marked on the ground, but the line should not be marked inside the square. See Figure A-3.

4. Sector: The sector within which all throws from the square must fall shall be clearly marked on the ground with lines 5 cm (2 in) wide, the inner edges of which shall form the sector boundary. These sector lines are extensions of the sides of the throwing square. See Figure A-3.



THROWING THE ULTRAWEIGHT (98, 200 & 300 lb)

1. The general rules in USATF Rule 187, Paragraphs 1-16 and rule 195 apply, except all references to the “circle” should be interpreted to mean the “square” for purposes of the ultraweight throw.

MEASURING THE ULTRAWEIGHT THROW (98, 200 & 300 lb)

In the Ultraweight Throw, the measurement of the throw shall be made from the nearest mark made by the landing of the implement to the inside of the front of the throwing square along a line from the mark. The measurement of the throws shall be made at right angles from the inside of the front foul line. The nearest visible part of the break/imprint to the throwing square shall be measured. The handle imprint is not measured. See diagram, Figure A-6.



APPENDIX

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RESOURCES

The following are suggested hardware sources.

Implement fabrication: Non-Ferrous Metals
 230 South Chicago St.
 Seattle, WA, 98108

attn: Scott Graham, 206-762-3600

Pricing based on market cost of materials at time of production.

The buyer is responsible to acquire and provide the implement handle, bow eye, anchor shackle and link to the Non-Ferrous Metals Company prior to production.

Connection hardware: www.westmarine.com, 800-BOATING.

Stainless steel bow eye, anchor u-bolt in cylinder, part #188953, 3/8"x 3". Can also use 1/2" version. Stainless steel anchor shackle, connection to the handle, 5/16", part #290000.

Galvanized quick links (1,700 lb capacity) for 98# part # 599357. Also available in stainless steel.

Other marine vendors can supply this hardware as well.

Handles and throwing square: Allied Weldery, 418 N. 2nd St., Coeur d' Alene, Idaho 83814, 208-664-4320, attn: Mike.

POINTS OF CONTACT

Hardware: George Mathews george.mathews@roadrunner.com

Rules: George Mathews & Ivars Ikstrums ivars.ikstrums@comcast.net



APPENDIX



Figure A-1: The Ultraweights



Figure A-2: The Handle



APPENDIX

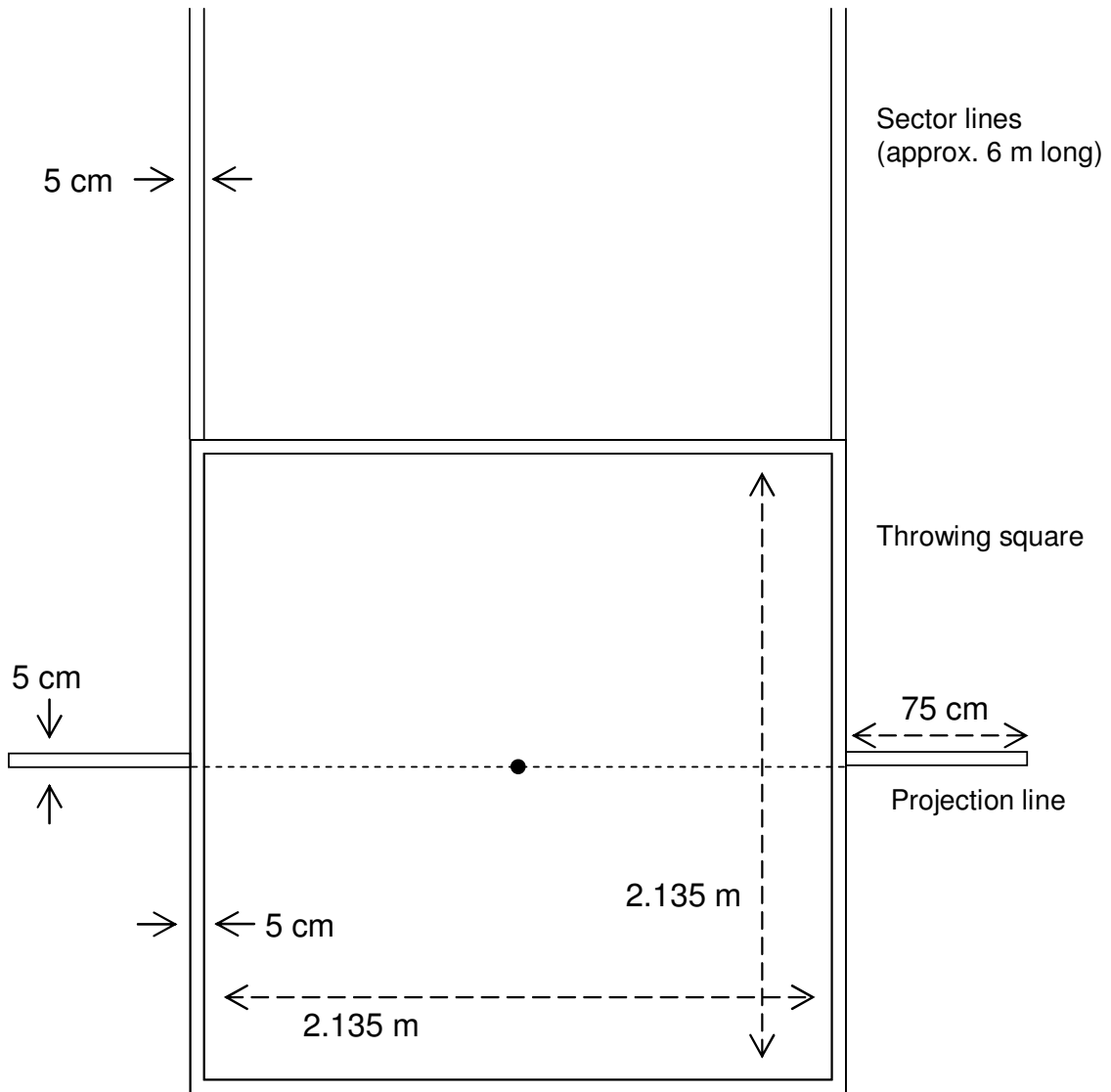


Figure A-3: The Throwing Area



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Figure A-4: Throwing Square (1)

APPENDIX



Figure A-5: Throwing Square (2)



APPENDIX

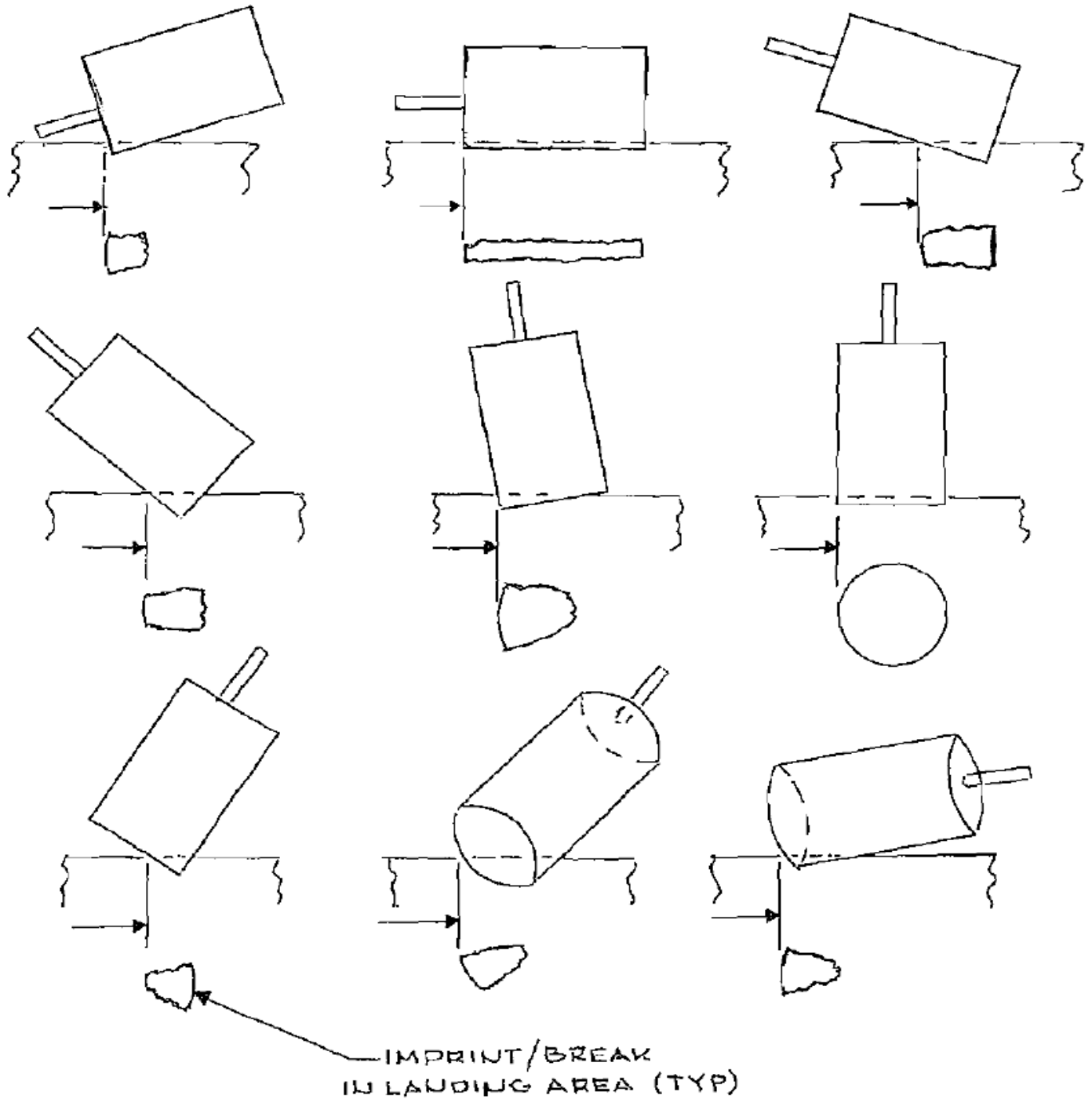


Figure A-6: Measurement of the Ultraweight Throw