

Combined Event Norms and Point Derivation Analysis- Re-centered in the Zero Tolerance Era

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Vertical Jumps/Decathlon

Combined Event Athlete Norms

- Top Ten in the World
- 1995
 - Height- 6'2 ½" (5'11 ½" – 6'5")
 - Weight- 186 lbs (174-211 lbs)
- 2004
 - Height- 6'3 ½" (5'10 ¾" – 6'6")
 - Weight- 192 lbs (181-205 lbs)
- 2008
 - Height: 6'2 ¾"(5'10"-6'7")
 - Weight: 193 lbs (172-207lbs)
- Four Most Recent World Record Holders
 - Height: 6'1 ½"
 - Weight: 192 lbs

Rovelto, 2006

Combined Event Athlete Norms

- Age
 - 1995
 - 26.4 yrs (23-32)
 - #1- 29 yrs old
 - 2004
 - 27.2 yrs (23-34)
 - #1- 30 yrs old
 - 2008
 - 25.5 yrs (21-32)
 - #1- 28 yrs old

Rovelto, 2006

Combined Event Athlete Norms

- Geographic Distribution
 - 1995
 - West- 6
 - (USA- 2)
 - Eastern Europe- 4
 - 2004
 - West- 6
 - (USA- 2)
 - Eastern Europe- 4
 - (1 trained in the West)
 - 2008
 - West- 6
 - (USA- 3, Jamaica-1, Cuba- 1, Germany-1)
 - Eastern Europe- 4
 - (Belarus- 1, Russia- 2, Kazakhstan- 1)

Rovelto, 2006

Point Derivation Analysis Model

- Template for direction of training program
- Assist in goal setting process
- Points scored in
 - Sprints/hurdles
 - Jumps
 - Throws
 - Endurance (1500 m)
$$\div \text{total score}$$

$$= \% \text{ of score per event group}$$

1993 World Championship - Stuttgart

- Top 10
 - Sprints/hurdles
 - 32.1%
 - Jumps
 - 31.6%
 - Throws
 - 27.7%
 - Endurance
 - 8.7%
- Champion- Dan O'Brien USA (8817 pts)
 - Sprints/hurdles
 - 32.4%
 - Jumps
 - 32.5%
 - Throws
 - 27.4%
 - Endurance
 - 7.7%

1997 World Championship - Athens

<ul style="list-style-type: none"> ■ Top 10 <ul style="list-style-type: none"> □ Sprints/hurdles <ul style="list-style-type: none"> ■ 32.5% □ Jumps <ul style="list-style-type: none"> ■ 31.3% □ Throws <ul style="list-style-type: none"> ■ 28.1% □ Endurance <ul style="list-style-type: none"> ■ 8.1% 	<ul style="list-style-type: none"> ■ Champion- Tomas Dvorak CZE (8837 pts) <ul style="list-style-type: none"> □ Sprints/hurdles <ul style="list-style-type: none"> ■ 32.9% □ Jumps <ul style="list-style-type: none"> ■ 30.4% □ Throws <ul style="list-style-type: none"> ■ 28.7% □ Endurance <ul style="list-style-type: none"> ■ 8.0%
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2004 Olympic Games - Athens

<ul style="list-style-type: none"> ■ Top 8 <ul style="list-style-type: none"> □ Sprints/hurdles <ul style="list-style-type: none"> ■ 32.2% (31.0 – 33.5) □ Jumps <ul style="list-style-type: none"> ■ 31.5% (30.8 – 32.5) □ Throws <ul style="list-style-type: none"> ■ 27.9% (26.0 – 29.4) □ Endurance <ul style="list-style-type: none"> ■ 8.5% (7.6 – 9.5) 	<ul style="list-style-type: none"> ■ Champion- Roman Seberle CZE (8893 pts) <ul style="list-style-type: none"> □ Sprints/hurdles <ul style="list-style-type: none"> ■ 31.0% □ Jumps <ul style="list-style-type: none"> ■ 32.0% □ Throws <ul style="list-style-type: none"> ■ 29.4% □ Endurance <ul style="list-style-type: none"> ■ 7.6%
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2008 Olympic Games - Beijing

<ul style="list-style-type: none"> ■ Top 8 <ul style="list-style-type: none"> □ Sprints/hurdles <ul style="list-style-type: none"> ■ 32.0% (30.4 – 34.2) □ Jumps <ul style="list-style-type: none"> ■ 31.4% (29.4 – 33.0) □ Throws <ul style="list-style-type: none"> ■ 28.4% (26.3 – 30.7) □ Endurance <ul style="list-style-type: none"> ■ 8.2% (6.6 – 9.2) 	<ul style="list-style-type: none"> ■ Champion- Bryan Clay USA (8791 pts) <ul style="list-style-type: none"> □ Sprints/hurdles <ul style="list-style-type: none"> ■ 32.8% □ Jumps <ul style="list-style-type: none"> ■ 30.6% □ Throws <ul style="list-style-type: none"> ■ 29.8% □ Endurance <ul style="list-style-type: none"> ■ 6.8%
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Point Derivation Distribution Model

<ul style="list-style-type: none"> ■ Top 8 Averages <ul style="list-style-type: none"> □ Sprints/hurdles <ul style="list-style-type: none"> ■ 32.2% □ Jumps <ul style="list-style-type: none"> ■ 31.5% □ Throws <ul style="list-style-type: none"> ■ 28.0% □ Endurance <ul style="list-style-type: none"> ■ 8.3% 	<ul style="list-style-type: none"> ■ Gold Medal Averages <ul style="list-style-type: none"> □ Sprints/hurdles <ul style="list-style-type: none"> ■ 32.3% □ Jumps <ul style="list-style-type: none"> ■ 31.5% □ Throws <ul style="list-style-type: none"> ■ 28.8% □ Endurance <ul style="list-style-type: none"> ■ 7.5%
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....so it appears the ideal distribution of points in an elite decathlon should be....

Sprints/hurdles- 32.3%

Jumps- 31.5%

Throws- 28.4%

Endurance- 7.8%

Question...

Have scores dropped in major championships since “the Zero Tolerance” era?

Competition	Gold	Silver	Bronze
1991 World Championships- Tokyo	8812	8549	8394
1992 Olympic Games- Barcelona	8611	8412	8309
1993 World Championships- Stuttgart	8817	8724	8548
1995 World Championships- Goteburg	8695	8489	8419
1996 Olympic Games- Atlanta	8824	8706	8664

Competition	Gold	Silver	Bronze
1997 World Championships- Athens	8837	8730	8652
1999 World Championships- Seville	8744	8556	8547
2000 Olympic Games- Sydney	8641	8606	8595
2001 World Championships- Edmonton	8972	8815	8603
2003 World Championships- Paris	8750	8634	8374

Competition	Gold	Silver	Bronze
2004 Olympic Games- Athens	8893	8820	8725
2005 World Championships- Helsinki	8732	8521	8385
2007 World Championships- Osaka	8676	8644	8586
2008 Olympic Games- Beijing	8791	8551	8527

Average Scores Necessary to Medal

■ 1991 – 2003	■ 2004 – 2008
□ Gold	□ Gold
■ Average- 8770	■ Average- 8773
■ Range- (8611 – 8972)	■ Range- (8676 – 8893)
□ Silver	□ Silver
■ Average- 8622	■ Average- 8634
■ Range- (8412 – 8815)	■ Range- (8521 – 8820)
□ Bronze	□ Bronze
■ Average- 8510	■ Average- 8555
■ Range- (8309 – 8664)	■ Range- (8385 – 8725)

This indicates that there has been little or no difference in podium place performance in major championships since the inception of “the zero tolerance era”

Question...

How has scoring depth in major championships been effected?

Average Scores for Places 4, 6 and 8

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| <ul style="list-style-type: none"> ■ 1991 – 2003 □ 4th place <ul style="list-style-type: none"> ■ Average- 8415 ■ Range- (8199 – 8644) □ 6th place <ul style="list-style-type: none"> ■ Average- 8309 ■ Range- (8154 – 8543) □ 8th place <ul style="list-style-type: none"> ■ Average- 8196 ■ Range- (8020 – 8318) | <ul style="list-style-type: none"> ■ 2004 – 2008 □ 4th place <ul style="list-style-type: none"> ■ Average- 8383 ■ Range- (8316 – 8475) □ 6th place <ul style="list-style-type: none"> ■ Average- 8277 ■ Range- (8223 – 8357) □ 8th place <ul style="list-style-type: none"> ■ Average- 8195 ■ Range- (8068 – 8257) |
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This indicates that there may be a slight reduction scoring for places 4-6 since 2003.....but the 8th place is the same.

Question...

What score will it take to medal?

Comparison of Top 10 on the World list to Top 8 in a Major Championship-2003

- | | |
|---|---|
| <ul style="list-style-type: none"> ■ <u>2003 World List</u> ■ Seberle (CZE)- 8807 Gotzis ■ Pappas (USA)- 8784 Palo Alto ■ Clay (USA)- 8482 Palo Alto ■ Karpov (KAZ)- 8374 Paris ■ Nool (EST)- 8281 Tallinn ■ Terek (USA)- 8275 Palo Alto ■ Dvorak (CZE)- 8242 Paris ■ Magnusson (ISL)- 8222 Gotzis ■ Hernu (FRA)- 8219 Talence ■ Rahnu (EST)- 8203 Tartu | <ul style="list-style-type: none"> ■ <u>2003 WC- Paris</u> ■ Pappas (USA)-8750 ■ Seberle (CZE)- 8634 ■ Karpov (KAZ)- 8374 ■ Dvorak (CZE)- 8242 ■ Hernu (FRA)- 8218 ■ Lobodin (RUS)- 8198 ■ Haifeng Qi (CHN)- 8126 ■ Nicklaus (GER)- 8020 |
|---|---|

Comparison of Top 10 on the World list to Top 8 in a Major Championship-2008

- | | |
|--|---|
| <ul style="list-style-type: none"> ■ <u>2008 World List</u> ■ Clay (USA)- 8832 Eugene ■ Krauchanka (BLR)- 8585 Hengelo ■ Hardee (USA)- 8534 Eugene ■ Suarez (CUBA)- 8527 Beijing ■ Pappas (USA)- 8511 Eugene ■ Karpov (KAZ)- 8504 Gotzis ■ Syssoev (RUS)- 8497 Gotzis ■ Smith (JAM)-8434 Kladno ■ Pogorelov (RUS)- 8381 Gotzis ■ Abele (GER)- 8372 Ratingen | <ul style="list-style-type: none"> ■ <u>2008 Olympic Games- Beijing</u> ■ Clay (USA)-8791 ■ Krauchanka (BLR)- 8551 ■ Suarez (CUBA)- 8527 ■ Pogorelov (RUS)- 8328 ■ Barras (FRA)- 8253 ■ Seberle (CZE)- 8241 ■ Kasvanov (UKR) 8238 ■ Nicklaus (GER)- 8220 |
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A quick analysis of world list indicates that podium finishes will come from athletes who have achieved a score ranking in the top five for that year and it will take based on recent averages, scores above 8550 for a bronze, 8630 for a silver and 8770 for a gold medal.

Question- Using the Point Derivation Distribution Model, how will these podium place scores be achieved?

- Gold- 8770
 - Sprints/Hurdles- (32.3%)- 2833 points
 - Jumps- (31.5%)- 2762 points
 - Throws- (28.4%)- 2490 points
 - Endurance- (7.8%)- 685 points
- Silver- 8630
 - Sprints/Hurdles- (32.3%)- 2787 points
 - Jumps- (31.5%)- 2718 points
 - Throws- (28.4%)- 2452 points
 - Endurance- (7.8%)- 673 points
- Silver- 8550
 - Sprints/Hurdles- (32.3%)- 2761 points
 - Jumps- (31.5%)- 2694 points
 - Throws- (28.4%)- 2428 points
 - Endurance- (7.8%)- 667 points

Examples of Point Distribution in Major Championship meets

- **2004 Olympic Games- Athens**
- **Seberle (CZE) 8893**
- S/H-2754(31.0%); J- 2845(32.0%); T-2614 (29.4%); E-680 (7.6%)
- **Clay (USA) 8820**
- S/H-2799(31.7%);J- 2789(31.7%); T-2562(29.0%); E-567(7.6%)
- **Karpov (KAZ) 8725**
- S/H- 2921(33.5%); J- 2689(30.8%); T- 2423 (27.8%); E- 692(7.9%)
- **Macey (GBR) 8414**
- S/H- 2651(31.5%); J- 2602(30.9%); T- 2386(28.4%); E-775(6.5%)
- **Warners (NED) 8343**
- S/H- 2831(33.9%); J- 2651 (31.8%); T- 2168 (26.0%); E-693(8.3%)
- **Zsviczky (HUN) 8385**
- S/H- 2579(31.1%); J- 2581(31.1%); T- 2379(28.8%); E-748(9.0%)
- **Hernu (FRA) 8237**
- S/H- 2683 (32.6%); J- 2539 (30.8%); T- 2233(27.1%); E- 782(9.5%)
- **Noel (EST) 8235**
- S/H- 2650 (32.2%); J- 2673 (32.5%); T- 2208(30.2%); E- 704(9.0%)

2005 World Championships-Helsinki

- **Clay (USA) 8732**
- S/H-2832(32.4%);J-2628(30.2%); T-2734(31.3%); E-538(6.1%)
- **Seberle (CZE) 8521**
- S/H-2644 (31.0%); J-2733(32.1%); T-2460(28.9%); E-683(8.0%)
- **Zsviczky (HUN) 8385**
- S/H- 2562(30.6%); J-2614(31.1%); T-2460(28.9%); E-730(8.7%)
- **Nicklaus (GER) 8316**
- S/H- 2570(30.9%);J-2697(32.4%); 2297(27.7%); 752 (9.0%)
- **Pogorelov (RUS) 8246**
- S/H-2597 (31.5%); T-2729(33.1%); T-2381(28.9%); E-539(6.5%)
- **Rahnu (EST) 8223**
- S/H-2700 (32.8%); J- 2550 (30.9%); T- 2412 (29.4%); E-561(6.8%)
- **Barras (FRA) 8087**
- S/H- 2598 (32.1%); J-2496 (30.9%); T- 2261(28.0%); 732(9.0%)
- **Dvorak (CZE) 8068**
- S/H- 2546 (31.5%); J- 2364 (29.3%); T-2441(30.2%); E- 717(9.0%)

2007 World Championships- Osaka

- **Seberle (CZE) 8676**
- S/H-2654(30.6%); J- 2714(31.3%); T-2597 (30.0%); E-710 (8.1%)
- **Smith (JAM) 8644**
- S/H- 2867(33.2%); J- 2560(29.6%); T- 2495 (28.9%); E- 722(8.3%)
- **Karpov (KAZ) 8725**
- S/H- 2836(33.0%); J- 2628(30.6%); T- 2440 (28.4%); E- 682(8.0%)
- **Drosdov (RUS) 8475**
- S/H- 2561(30.2%); J- 2699(31.8%); T- 2515(29.7%); E-700(8.3%)
- **Nicklaus (GER) 8371**
- S/H- 2586(30.9%); J- 2778 (33.2%); T- 2279 (27.2%); E-728(8.7%)
- **Sysoev (RUS) 8357**
- S/H- 2695(32.2%); J- 2527(30.2%); T- 2430(29.1%); E-705(8.5%)
- **Barras (FRA) 8262**
- S/H- 2557 (30.9%); J- 2558 (31.0%); T- 2374(28.7%); E- 773(9.4%)
- **Garcia (CUB) 8257**
- S/H- 2735(33.2%); J- 2556 (31.0%); T- 2380(28.8%); E- 586(7.0%)

2008 Olympic Games- Beijing

- **Clay (USA) 8791**
- S/H-2885(32.8%); J-2696(30.6%); T-2626(29.8%); E-613(6.8%)
- **Krauchanka (BLR) 8551**
- S/H-2761 (32.3%); J-2687(32.1%); T-2241(26.3%); E-761(8.9%)
- **Suarez (CUB) 8527**
- S/H- 2744(32.1%); J-2562(30.1%); T-2464(29.0%); E-750(8.8%)
- **Pogorelov (RUS) 8238**
- S/H-2535 (31.5%); J-2691(32.3%); T-2553(30.7%); E-551(6.6%)
- **Barras (FRA) 8253**
- S/H- 2589 (31.6%); J-2510 (30.6%); T- 2348(28.7%); 749(9.1%)
- **Seberle (CZE) 8241**
- S/H- 2535 (30.8%); J- 2735 (33.2%); T-2348(28.5%); E- 621(7.5%)
- **Kasvanov (RUS) 8238**
- S/H- 2819(34.2%); J-2419(29.4%); 2248(27.2%); 752 (9.2%)
- **Nicklaus (GER) 8220**
- S/H- 2592 (31.5%); J- 2705 (33.0%); T-2197(26.7%); E- 726(8.8%)

How do the young US decathletes compare to Bryan Clay, Olympic Champion?

- **Bryan Clay- (28 yrs old) 8832 (PR) 2008 US OT, Eugene**
- 10.39; 7.39m; 15.17m; 2.08m; 48.41; 13.75; 52.74m; 5.00m; 70.55m 4:50.97
- Sprints/Hurdle-2897(32.8%); Jumps- 2696 (30.6%); Throws- 2626 (29.7%); Endurance- 613(6.9%)
- **Trey Hardee- (24 yrs old) 8534 (PR) 2008 US OT, Eugene**
- 10.43; 7.75m; 14.07m; 2.02m; 47.99; 13.71; 42.41m; 5.00m; 63.69m 4:44.79
- Sprints/Hurdle-2914(34.1%); Jumps- 2729 (32.0%); Throws- 2241 (26.3%); Endurance- 650(7.6%)
- **Jake Arnold- (24 yrs old) 8215 (PR) 2007 NCAA, Sacramento**
- 11.12; 6.88m; 14.15m; 2.02m; 48.38; 14.20; 44.42m; 5.30m; 58.80m 4:34.22
- Sprints/Hurdle-2674(32.6%); Jumps- 2611 (31.8%); Throws- 2213 (26.9%); Endurance- 717(8.7%)
- **Mustafa Abdur-Rahim- (26 yrs old) 8175 (PR) Thorpe Cup, Manhattan, KS**
- 10.74; 7.44m; 14.01m; 1.88m; 47.77; 14.15; 47.23m; 4.55m; 54.76m 4:23.33
- Sprints/Hurdle-2794(34.1%); Jumps- 2391 (29.2%); Throws- 2201 (27.0%); Endurance- 789(9.7%)
- **Chris Helwick (23 yrs old) 8143 (PR) Thorpe Cup, Manhattan, KS**
- 11.16; 7.09m; 13.68m; 2.03m; 49.94; 15.06; 45.12m; 4.95m; 66.72m 4:24.51
- Sprints/Hurdle-2484(30.5%); Jumps- 2561 (31.4%); Throws- 2317 (28.5%); Endurance- 781 (8.6%)

How does age and experience effect point score derivation?

- Bryan Clay 1999
- Personal Best Score- 7300 pts
- Sprints/Hurdles- 2590 (35.5%)
- Jumps- 2245 (30.8%)
- Throws- 1882 (25.8%)
- Endurance- 583 (8.0%)
- Bryan Clay- 2008
- Personal Best score-8832 pts
- Sprints/Hurdles- 2897 (32.8%)
- Jumps- 2696 (30.6%)
- Throws- 2626 (29.7%)
- Endurance- 613 (6.9%)

Developmental Progression- Steve Fritz

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
■ 11.40	11.34	11.19	11.18	10.99	10.84	10.80	10.63	10.84	10.63	10.75	
■ 6.40m	6.65m	7.14m	6.87m	7.24m	7.68m	7.57m	7.84m	7.69m	7.85m	7.49m	
■ 10.77m	12.90m	14.20m	14.21m	13.85m	14.41m	13.92m	14.68m	15.32m	16.23m	14.96m	
■ 2.01m	2.01m	2.07m	2.01m	2.15m	2.05m	2.06m	2.05m	2.02m	2.04m	2.07m	
■ 51.30	51.15	50.40	50.23	49.80	49.04	48.40	48.70	49.83	49.36	48.53	
■ 1 st Day	3943	4030	4193	4187	4280	4442	4231	4493	4334		
■ 15.20	15.04	14.87	14.61	14.36	14.27	13.99	14.04	13.96	13.75	13.74	
■ 32.92m	39.25m	44.36m	46.80m	45.48m	47.71m	45.48m	47.36m	53.27m	50.24m	50.28m	
■ 3.20m	3.76m	4.50m	4.70m	5.10m	4.64m	5.00m	4.95m	4.65m	5.10m	5.00m	
■ 50.78m	52.84m	60.09m	58.56m	59.15m	62.52m	62.63m	67.47m	66.33m	65.73m	65.24m	
■ 4:35.00	4:29.70	4:33.46	4:39.05	4:34.83	4:28.11	4:23.56	4:38.91	4:39.40	4:38.26	4:31.14	
■ 2 nd Day	3764	3893	4066	3939	4103	4128	4122	4301	4275		
■ Total Score-	6484	6990	7707	7924	8079	8073	8324	8548	8353	8644	8604

Developmental Progression- Chris Helwick

Event	2002	2003	2004	2005	2006	2007	2008
■ 100m	11.73	11.29	11.41w	11.36	11.77w	11.24	10.94
■ Long Jump	6.40m	6.66m	6.75m	6.97m	7.46m	6.86m	7.20m
■ Shot Put	11.49m	12.43m	13.80m	14.10m	13.88m	14.11m	13.80m
■ High Jump	2.00m	2.02m	2.03m	2.04m	2.09m	2.03m	2.00m
■ 400m	51.80	50.85	50.66	49.22	49.57	50.04	49.90
■ 1 st Day	3548	3739	3889	4051	4173	3968	4102
■ 110mHH	15.57	14.61w	15.27	15.06	15.02	15.04	15.06
■ Discus	35.62m	40.04m	40.99m	41.90m	44.91m	42.77m	45.82m
■ Pole Vault	3.43m	4.17m	4.64m	5.00m	5.20m	4.90m	4.55m
■ Javelin	45.64m	52.68m	60.75m	61.20m	65.11m	65.12m	67.35m
■ 1500m	4:35.50	4:29.20	4:28.5	4:29.70	4:29.9	4:22.8	4:21.8
■ 2 nd Day	3657	3660	3803	3925	4142	4056	4172
■ Season Best Score-	6315	7216	7358	7780	7772	7732	8143
■ Season PR's Total-	6592	7371	7692	7976	8316	8025	8224
■ Sprints/Hurdles-	33.6%	33.6%	30.8%	31.0%	29.1%	30.7%	31.0%
■ Jumps-	30.1%	29.8%	31.4%	32.9%	33.4%	31.0%	31.3%
■ Throws-	25.4%	26.2%	27.9%	27.5%	27.7%	28.3%	28.4%
■ Endurance-	10.7%	10.2%	9.7%	9.2%	9.6%	10.2%	9.7%

Scoring Differential- Chris Helwick 383 points

PR Meet	Points	PR's	Points
■ 100m	11.16 825 pts	■ 100m	10.94 874 pts
■ LJ	7.09m 835 pts	■ LJ	7.46m 925 pts
■ SP	13.68m 709 pts	■ SP	14.11m 735 pts
■ HJ	2.03m 831 pts	■ HJ	2.09m 887 pts
■ 400	49.94 817 pts	■ 400	49.22 851 pts
■ HH	15.06 842 pts	■ HH	15.02 847 pts
■ DT	45.12m 769 pts	■ DT	45.82m 784 pts
■ PV	4.95m 895 pts	■ PV	5.20m 972 pts
■ JT	66.72m 839 pts	■ JT	67.35m 849 pts
■ 1500m	4:24.50 781 pts	■ 1500m	4:21.40 781 pts
■ Total	8143pts	■ Total	8526 pts