

Coaching the Long Jump

A Holistic Approach by
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Successful Coaching Requires...

- Balance between mechanics and natural movement
- Build a relationship/trust
- K.I.S.S. principle – Keep it simple, stupid!
- K.I.L.L also good– Keep it likeable, learnable
- Pragmatic approach
- Being an archeologist
 - Brush away the clutter to reveal the treasure

Treasures



4 Parts to the Long Jump

- Approach
- Take-off
- In the Air
- Landing



The Approach

- Speed: the most dominant factor
 - It takes time to accelerate
 - 6 seconds or 50-60 meters to reach full speed
 - Accelerate to the desired controlled speed (~90%) and maintain it to the board
- Body position erect at the plant
- Run through and off the board; don't freeze on the penultimate step.
- Take-off is part of the approach

Reese B. 3rd 7,10m



Lebedewa T. 2nd 6,97m



The Take-Off

- Next to last (penultimate) and last step are part of the take-off (last 3-4 to some degree)
 - Slight lowering of the center of gravity
 - Two cues (long/short method)
 - Shorten last step slightly by being quick off the penultimate step (Don't freeze on the penultimate)
 - Free leg and opposite arm drive up (Beamon)
- Take-off position as important as speed
 - Last three steps
 - Body synchronicity
 - Pay attention to the hips and center of mass

Reese B. 3rd 7,10m



Lebedewa T. 2nd 6,97m



In the Air

- The key is a great knee drive and have tall take-off from the board
- Style in the air not as important
- Forestall the natural rotation in the air as long as possible by rotating arms high above head.
- Hang style
 - Free flight; all body parts fall at the same rate

In the Air/Preparation for landing

- Bring heels tight under butt and lift the knees
- Get nose to the knees
- Drive arms down past hips

Reese B. 3rd 7,10m



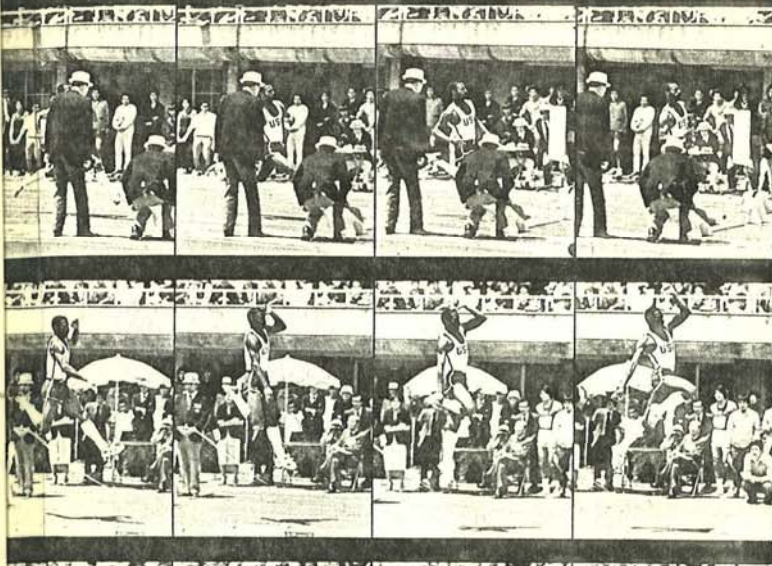
Lebedewa T. 2nd 6,97m

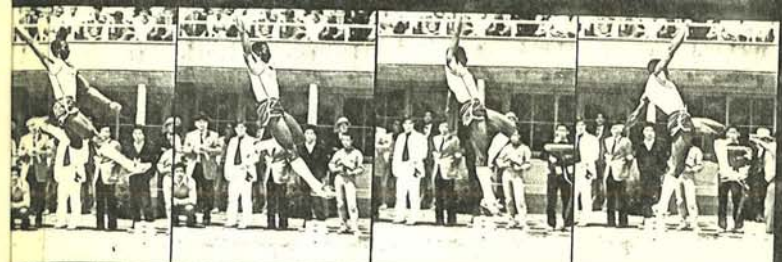


最速記録—走幅跳8m52

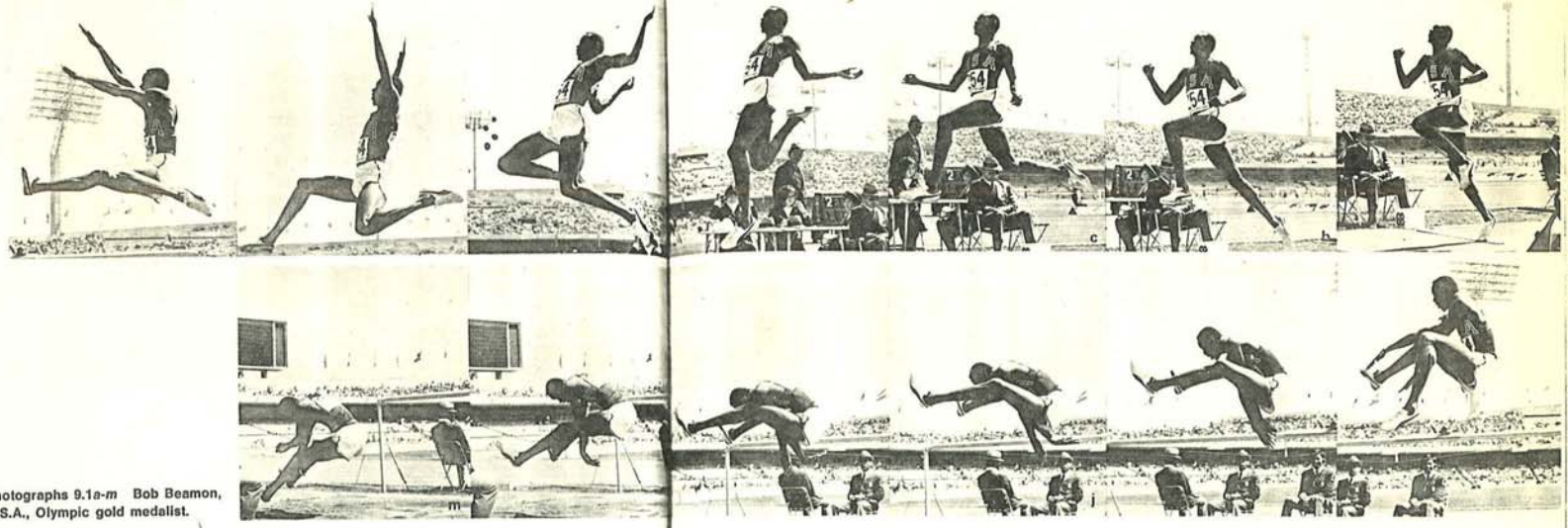


(連続写真：織田記念走幅跳より)





	記録	記録
4	織田記念	走幅跳
28	(広島)	8 m 28 1位
5	兵庫リレー	走幅跳
3	(神戸)	8 m 00 1位
5	久保二子	走幅跳
5	(東京)	8 m 04 1位



Photographs 9.1a-m Bob Beamon,
U.S.A., Olympic gold medalist.

The Landing

- Emphasis on approach and take-off
- Position in the air sets up the landing
- Feet land ahead of center of mass
 - Don't sit back in the pit
 - Butt slides over feet imprints
- Drive arms forward and then down and past the hips just prior to landing if possible.

Reese B. 3rd 7,10m



Lebedewa T. 2nd 6,97m



Name / Attempt	Distance [m]				Stride length [m]					lowering of CM	Velocity [m/s]				
	officially measured	real	loss at take-off (toe-to-board)	loss by landing	3last	2last	1last	relative length 2last / 3last [%]	relative length 1last / 2last [%]		3last	2last	1last	take-off instant	loss at take-off
Reese B. 3rd	7.10	7.18	0.08	0.00	1.91	2.45	1.97	128	81	0.09	9.77	9.89	9.59	8.31	1.28
Lebedewa T. 2nd	6.97	6.97	0.00	0.00	2.04	2.21	2.17	108	98	0.12	9.38	9.53	9.34	7.62	1.71
Mey Melis K. 3rd	6.80	6.85	0.05	0.00	2.06	2.16	1.95	105	90	0.07	9.14	9.23	9.13	7.87	1.26
Gomes N. 1st	6.77	6.86	0.09	0.00	2.41	2.61	2.08	108	80	0.08	9.33	9.47	9.43	8.10	1.33
Kucherenko O. 3rd	6.77	6.77	0.00	0.00	2.17	2.32	2.09	107	90	0.05	9.19	9.29	9.14	7.39	1.75
Proctor S. 3rd	6.71	6.76	0.05	0.00	2.07	2.16	2.09	105	97	0.03	9.25	9.34	9.07	7.64	1.43
Maggi M. 1st	6.68	6.81	0.13	0.00	2.30	2.44	2.28	106	93	0.01	9.58	9.60	9.52	8.30	1.22
Balta K. 1st	6.62	6.64	0.02	0.13	1.91	2.15	1.94	112	90	0.03	9.57	9.55	9.39	8.04	1.35

Name / Attempt	Take-off						Lead leg		Landing			
	duration [s]	inclination angle [°]	trunk-angle [°]	trunk rotation [°]	minimal knee-angle [°]	angle of take-off [°]	thigh-angle at take-off [°]	average velocity [°/s]	distance [m]	trunk angle [°]	knee angle [°]	hip angle [°]
Reese B. 3rd	0.13	29	97	5	128	20.7	-1	859	0.52	68	150	83
Lebedewa T. 2nd	0.11	25	101	15	134	24.0	-12	702	0.49	70	148	84
Mey Melis K. 3rd	0.11	27	100	5	136	23.5	-8	855	0.53	87	158	106
Gomes N. 1st	0.12	28	99	2	137	21.7	-21	668	0.49	75	135	85
Kucherenko O. 3rd	0.12	27	98	7	141	24.5	-1	840	0.46	60	158	79
Proctor S. 3rd	0.13	27	96	2	131	22.1	-2	738	0.44	77	128	82
Maggi M. 1st	0.11	21	102	8	142	17.6	5	840	0.49	66	137	69
Balta K. 1st	0.11	27	97	1	138	20.2	-16	802	0.52	81	148	98

Summary data estimates for three long jumps taken by Brittany Reese at the 2011 USATF Championships.

(These estimates are based on data extracted from highspeed camera images of the jumps)
 M. R. Ramey
 June 29, 2011

Brittany Reese at 2011 USATF Championships

Name / Att.	Jump distance(m)			Stride length (m)			Horizontal velocity (m/s)						Vertical Velocity (m/s)	Support duration at Take-off (s)	Angle of take-off (degrees)	ESTIMATE of the mass
	Measured	Actual	Toe-to-Scratch Line Loss	3L	2L	1L	3L	2L	1L	Take-off	Loss at Take-off	Percent loss at Take-off				
Reese Jump 1 (7.02m)	7.02	7.13	-0.11	2.25	2.71	2.15	10.21	9.80	10.21	8.80	-1.41	-14%	2.71	0.140	17.1	6.1
Reese Jump 4 (Foul)--est. distance	7.13	7.06	0.07	#VALUE!	2.64	1.92	9.86	9.98	10.12	8.45	-1.67	-17%	3.06	0.130	19.9	6.4
Reese Jump 6 (7.19m)	7.19	7.28	-0.09	2.34	2.73	2.13	10.17	9.44	9.51	8.45	-1.06	-11%	2.71	0.135	17.8	5.9

Training Overview

- Progression, communication, aggressive patience, adapt before adding, and personal care.
- Move from low to high stress
 - Emphasize speed and rest during championships phase.
- Speed training is critical
- Conditioning/strength emphasis in the winter
 - Moderate interval training with set rest periods

The Warm-up

- Barefoot strides on infield grass
- Sprint mobility drills
- Static stretching
- Dummy sprint drills/3 box plyo hops
- Weighted jump-roping/weighted arm swings
- Hurdle walk-overs
- Short break before the day's workout

Approach Training

- Work away from the jump area
- Mark steps
- Count method
- Acceleration patterns
- Time the runs
- Work on consistency
- Tape on penultimate/3rd from last for steering

Jump Workouts

- Sets of 6-stride jumps
 - One, two, three, four, five AND six
 - First set for height, second set for distance
- Incline box jumps for in-air technique
- Small 2", 4", 6" black box drills
- End with runway work or sprints on the track
- We use early meets to practice the full approach and jump—this is critical!

Training Implements



- Incline box
- Hurdle jumps
 - 27” hurdle for women and a 30” hurdle for men to force them to emphasize the tall position and knee drive at takeoff

Training Implements



- A 4x6" square plyometric box to overload and simulate the last three steps
- Flying 100's

Sprint Workouts

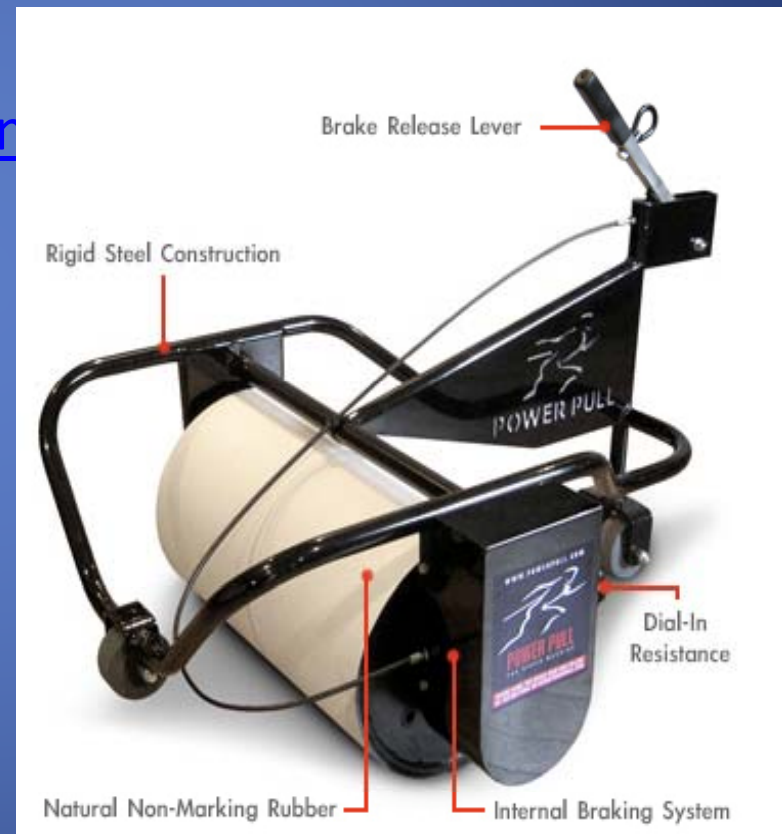
- Flying 100s
- Acceleration patterns
 - Sets of 60/80 or 40/60
- 200s, 180's, 150s, 120s
- Sprint approaches
- Cardio intervals on days in the weight room

Weight Training

- Not as critical as speed training.
- Strength in fall; speed/technique in spring, but some of both year round.
- Primary in the fall, but lift year-round
- 'Power Pull'
 - Adjustable resistance
 - Couples strength and power with conditioning

Training Implements

- The Power Pull machine
 - <http://www.powerpull.com>



In Competition

- Beauty of three/six attempts
 - Ideally we want a legal first jump, but we try to have all of them be the “same”
 - Next jumps
 - less concern over fouls
 - “Just go for it” mentality
 - Come out focused and hit a winning jump early
 - 1 jump—anywhere in the sequence wins.

Mental Aspect

- Confident and relaxed—am convinced you cannot “try” to jump. Trust and let it “happen”
- Cut the head off on meet day.
- Be YOU---Do what YOU do.
- Plan at practice, PERFORM at meets
- Trust