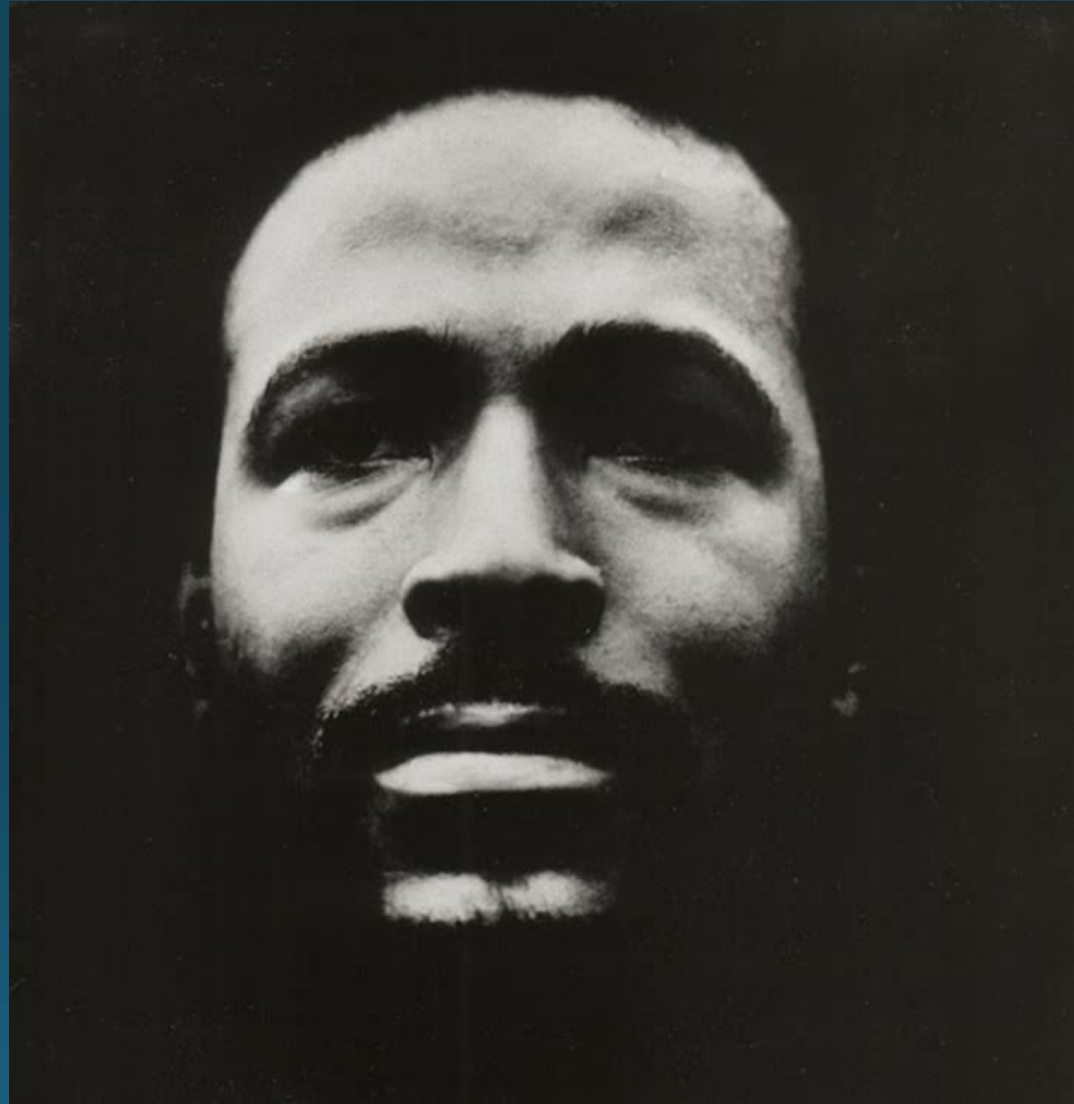


Seek inspiration.
(It will not seek you.)



400 Meter Hurdles: tools for practical application

December 2016

VINCE ANDERSON / TEXAS A&M UNIVERSITY

vanderson@athletics.tamu.edu

I have learned so much from so many:

- Charla and Kohl
- Brian Mondschein – Kutztown St., SE LA, Princeton
- Terry Crawford, Stan Huntsman – University of Texas
- Winckler, Seagrave, Pfaff, Schexnayder - Coaches Education and beyond
- Tom Tellez, Mark Baughman, Mike Takaha – University of Houston
- Dorothy Doolittle – Houston, Tennessee
- Bill Webb, Gorge Watts - Tennessee
- Pat Henry – Texas A&M
- Juan, Jeremy, Kris, Francique and Trent E. – Texas A&M
- Jim, Wendell, Dan, Andreas, Kebba
- Houston T&F Community – Tellez, Brunson, Lopez, Lewis, Hines, Burrell, Guidry, Jacket, Green, Bethany, Onyali, Duncan, Taylor, etc. etc.
- Amazing athletes

We live in HISTORIC hurdling times:

- Historic quality in US high school competition (Lawrence, Dabbs, Minkah and others)
- Lawrence Johnson – 3 Olympic medalists 2016 (2 Olympic Champions)
- Edrick Floreal – 2 NCAA Champions 2015 & 2016 (World Record Holder 2016)
- Mike Holloway – Olympic Champion 2016
- Tonja Buford Bailey – 2 US Olympians 2016 (1 Bronze medalist)
- Ryan Wilson – Olympic silver medalist
- Andreas Behm – Olympic Champion & WR holder 2012 and two USOT 4^{ths} '16
- Gary Winckler – National treasure
- Dennis Shaver – World bronze medalist 2015
- Curtis Frye, Curtis Taylor, Charles Ryan, & Brooks Johnson
- Kebba Tolbert – World U20 bronze medalist 2014 / teacher
- Chris Johnson – 12.83, 12.98, and 13.16 heptathletes!!! Thanks for discourse
- Pat Henry and Alleyne Francique – 400m HUR partners

400 meter hurdles!

MY FAVORITE EVENT TO COACH

Every event has one race model,
EXCEPT THE 400 METER HURDLES

Our job: training the sprinter within while
connecting the hurdler with an optimal race pattern.

- We take a speed reserve approach to the 400m HUR

We train all our athletes for:

- 4 x 100 relay
- 200 m
- specific training adaptations (G1 & G2)

- Write one training program, with variations, based upon athlete specialty:
 - 100m, 200m, 4 X 100 relay G1
 - 100m, 200m, 4 X 100 relay, 100h G1
 - 200m, 400m, 4 X 100 relay G2
 - 200m, 400m, 4 X 100 relay, 400h G2

- Variations:
Group 1 - 100 /200m specialists (incl 100 h)
Group 2 – 200 /400m specialist (incl 400h)

“plus 1” system:

if G1 does 5 x 150 segment runs,
then G2 does one more

400m Hurdles G1

J Williams

13.19*

57.77

52.3r

D. Flemings

12.85*

57.76

52.4r

400m Hurdles G2

Lee

Buchananan

Little

Sutherland

14.16

-

13.47

-

55.78

54.78

53.51

56.44

51.3r

50.8r

52.5r

52.24

52.79

51.06

53.67

23.08w

23.17

- Training priority = SPRINT
 - speed development (speed reserve)
 - acceleration development (speed reserve)
 - specific hurdle rhythm (distribution)
 - intensive tempo / specific endurance
 - technical elements

de-emphasize non-specific endurance

400m Hurdles

Train for 200m and 4x100 relay

Specific training adaptations include

- secondary leg hurdling
- “optimal hurdling” (Winckler)
- race modelling
- Competition

- We get asked alot

The longest single training run we do in a training year:

- 400 m (few)
- 350 m (more than a few)

- Intensive tempo

We do lots of runs :

- 300 m
- 250 m
- 200 m
- 150 m
- 120 m

- I needed some guidance, so I did a study (2005)
 - assumptions
 - 42 samples (36 elites & 6 sub-elites, of my choosing)
 - data driven

Name	Res	Venue	H1 - H10	%	Perf.	Ap + R.I.	%	Appr.	%	Run-in	1st zoom	Last zoom	zoom diff.	Fast Unit	to	Slow Unit	to	Unit diff.
			315m			85m		45m		40m								
Young	1 f	OG 1992	35.46	.751	46.79wr	11.26	.241	6.07	.130	5.19	22.29	24.50	2.21	3.57	h2	4.40	h10	0.83
Al-Somaliy	2 f	OG 2000	36.40	.766	47.53	11.13	.234	5.94	.125	5.19	22.62	24.91	2.29	3.72	h2	4.52	h10	0.80
Taylor (Ln 1)	1 f	OG 2000	36.56	.770	47.50	10.94	.230	5.9	.124	5.04	22.66	24.84	2.18	3.72	h2	4.44	hg,10	0.72
Schmid	1 f	? 1982	?	?	47.54er						22.8	24.7	1.9					0.00
Herbert	3 f	OG 2000	36.56	.765	47.81	11.25	.235	5.98	.125	5.27	22.98	24.83	1.85	3.8	h2	4.48	h10	0.68
Brazell	2f	NCAA 2005	36.58	.767	47.67	11.09	.233	5.95	.125	5.14	22.92	24.75	1.83	?	h2	4.45	h10	
Young	4 f	OG 1988	36.54	.762	47.94	11.40	.238	6.07	.127	5.33	22.79	25.15	2.36	3.65	h2	4.67	h10	1.02
Graham	5 f	OG 1988	36.80	.766	48.04	11.24	.234	6.15	.128	5.08	23.27	24.77	1.5	3.81	h2	4.55	h10	0.74
Carter	4 f	OG 2000	36.82	.766	48.04	11.22	.234	5.78	.120	5.42	22.58	25.46	2.88	3.72	h2	4.6	h10	0.88
Moses	1 s1	OG 1988	36.84	.769	47.89	11.05	.231	5.95		5.1	23.3	24.59	1.29	3.77	h2	4.44	h10	0.67
De Araujo (L8)	5 f	OG 2000	36.96	.765	48.34	11.38	.235	5.98		5.4	22.62	25.72	3.1	3.68	h2	4.68	h10	1.00
Phillips	1 s2	OG 1988	37.04	.769	48.19	11.15	.231	5.92		5.23	23.05	25.14	2.09	3.83	h3	4.59	h10	0.76
Herbert	1 s2	OG 2000	37.16	.768	48.38	11.22	.232	5.96		5.26	23.28	25.1	1.82	3.84	h2	4.56	h10	0.72
Adkins	1 f	USATF 94	37.18	.768	48.41	11.23	.232	5.77		5.46	22.62	25.79	3.17	3.75	h3,4	4.86	h10	1.11
Taylor	2 s2	OG 2000	37.28	.769	48.49	11.21		5.84		5.37	22.8	25.69	2.89	3.76	h2	4.6	h10	0.84
Clement	1 f	USATFJO 02	38.37	.771	49.77	11.40	.229	6.14		5.26	23.88	25.89	2.01	3.9	h2	4.66	hg	0.76
Stamps (Ln 1)	5 f	SEC 2002	38.75	.766	50.62pr	11.87	.234	6.22		5.54	24.38	26.24	1.86	3.98	h2	4.79	h10	0.81
Gunnell	1 f	WC 1993	40.44	.767	52.74wr	12.30		6.68		5.62	25.45	27.29	1.84	4.14	h2	4.87	h10	0.73
Pernia	1 f	WC 1999	40.47		52.89	12.42		6.58		5.84	25.27	27.62	2.35	4.13	h2,3	5.03	h10	0.90
Farmer-Patrick	2 f	WC 1993	40.53	.768	52.79	12.26		6.55		5.71	25.17	27.62	2.45	4.06	h2	4.92	h10	0.86
Buford-Bailey	2 f	WC 1995	40.54		52.62	12.08		6.47		5.61	24.92	27.7	2.78	4.03	h2	5.07	h10	1.04
Buford-Bailey	1	Zurich 95	40.71		52.90	12.19		6.73		5.46	25.53	27.37	1.84	4.08	h2	5.05	hg	0.97
Ledovskaya	2 f	OG 1988	41.08	.772	53.18	12.10		6.36		5.74	24.97	28.21	3.24	4.05	h2	5.15	h10	1.10
Privalova	1 f	OG 2000	40.50	.764	53.02	12.52	.236	6.55	.124	5.97	25.04	27.98	2.94	4.13	h2	5.13	h10	1.00
Busch	1	Potsdam 87	41.10		53.24	12.14		6.57		5.57	25.67	27.57	1.9	4.09	h2	5.02	h10	0.93
Pernia —x	-	WC 2001	41.11	-	53.50	12.39	-	6.67	-	5.72	25.77	27.73	1.96	4.22	h2,3	5.07	h10	0.85
Flintoff-King	1 f	OG 1988	41.15	.774	53.17	12.02		6.53		5.49	25.62	27.54	1.92	4.16	h2	5.04	h10	0.88
Busch	4 f	OG 1988	41.15	.766	53.69	12.54		6.61		5.93	25.54	28.15	2.61	4.07	h2	5.19	h10	1.12
Fiedler	3 f	OG 1988	41.26	.769	53.63	12.37		6.33		6.04	25.13	28.5	3.37	4.04	h2	5.2	h10	1.16
Farmer-Patrick	1 f	USA OT 92	41.70	.778*	53.62	11.92		6.5		5.42	25.67	27.95	2.28	4.23	h2	5.07	h10	0.84
Ledovskaya	2 s1	OG 1988	41.75	.773	54.01	12.26		6.42		5.84	25.62	28.39	2.77	4.03	h2	5.24	h10	1.21
Gunnell	4 s1	OG 1988	41.83	.768	54.48	12.65		6.87		5.78	26.6	27.88	1.28	4.25	h2	5.14	h10	0.89
Flintoff-King	1 s1	OG 1988	41.84	.775	54.00	12.16		6.58		5.58	25.81	28.19	2.38	4.18	h2	5.29	h10	1.11
Sheffield	3 s1	OG 1988	42.14	.775	54.36	12.22		6.42		5.8	25.75	28.61	2.86	4.1	h2	5.15	h10	1.05

- 400 HUR performance conclusions

- Effective distribution range is same for M&W
- Effective distribution range is same for elites, sub-elites & dev

PROPORTIONALITY

- Effective distribution range is same for 400m and 400mH
- Optimal range of 1st 200 is 47.1%-48.1% (.471-.481)
- Use multiplier of .476 (47.6%) for mid-sample
- Bias: I will use .478 b/c it is on the "patient side" of mid-sample
- (.478 avg of 42 samples)

- $400m = 280/120 + -$
 $400m Hur = 280/120 + -$

Arithmetic:

Van Niekirk WR 400

$$20.50 + 22.53 = 43.03$$

$$20.53 / 43.03 = .476 \text{ (47.6\%)}$$

47.8%

.478

- Arithmetic:

Goal pace $49.98 \times .478 = 23.89$ first 200

$49.98 - 23.89 = 26.09$ last 200

$49.98 = 23.89 / 26.09$ model distribution

factors		[.123]+	[.768]	+	[.109]		[.0854]	[.0165]
Goal	=	Start +	Hur Seg	+	Run in	(Unit Avg.)	Units Range	Unit Diff.*
		to H1	H1 - H10		H10 - Fin		fast to slow	.1986 of Avg Unit
46.70	=	5.74 +	35.87	+	5.09	(3.99)	3.68- 4.44	.76
47.17	=	5.80 +	36.23	+	5.14	(4.03)	3.72- 4.48	.76
47.64	=	5.85 +	36.60	+	5.19	(4.07)	3.76- 4.54	.78
48.11	=	5.92 +	36.95	+	5.24	(4.11)	3.79- 4.58	.79
48.57	=	5.97 +	37.31	+	5.29	(4.15)	3.82- 4.62	.80
49.04	=	6.03 +	37.67	+	5.34	(4.19)	3.86- 4.66	.80
49.52	=	6.09 +	38.03	+	5.40	(4.23)	3.90- 4.71	.81
49.98	=	6.15 +	38.39	+	5.44	(4.27)	3.93- 4.75	.82
50.46	=	6.20 +	38.76	+	5.50	(4.31)	3.97- 4.80	.83
50.93	=	6.26 +	39.12	+	5.55	(4.35)	4.00- 4.84	.84
51.40	=	6.32 +	39.47	+	5.61	(4.39)	4.03- 4.87	.84
51.86	=	6.38 +	39.83	+	5.65	(4.43)	4.08- 4.93	.85
52.33	=	6.43 +	40.20	+	5.70	(4.47)	4.12- 4.98	.86
52.80	=	6.49 +	40.55	+	5.76	(4.51)	4.16- 5.03	.87
53.27	=	6.55 +	40.92	+	5.80	(4.55)	4.19- 5.07	.88
53.74	=	6.61 +	41.27	+	5.86	(4.59)	4.23- 5.11	.88
54.21	=	6.66 +	41.64	+	5.91	(4.63)	4.26- 5.15	.89
54.68	=	6.72 +	42.00	+	5.96	(4.67)	4.29- 5.19	.90
55.15	=	6.78 +	42.36	+	6.01	(4.71)	4.33- 5.24	.91
55.62	=	6.84 +	42.72	+	6.06	(4.75)	4.36- 5.28	.92
56.09	=	6.89 +	43.09	+	6.11	(4.79)	4.40- 5.32	.92

60.85	=	7.48 +	46.69	+	6.68	(5.19)	4.79- 5.78	.99

49.52 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.09	3.90	3.92	3.96	4.05	4.17	4.31	4.43	4.58	4.71	5.40	37.98
Cumulative	6.09	9.99	13.91	17.87	21.92	26.09	30.40	34.83	39.41	44.12	49.52	23.67/ 25.85
49.98 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
Units	6.15	3.93	3.96	4.00	4.08	4.21	4.35	4.48	4.63	4.75	5.44	38.34
Cumulative	6.15	10.08	14.04	18.04	22.12	26.33	30.68	35.16	39.79	44.54	49.98	23.89/ 26.09
50.46 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
Units	6.20	3.97	4.01	4.04	4.12	4.25	4.39	4.52	4.66	4.80	5.50	38.70
Cumulative	6.20	10.17	14.18	18.22	22.34	26.59	30.98	35.50	40.16	44.96	50.46	24.13/ 26.33
50.93 model	to H1	to H2	to H3	to H4	to H5	to H6	to H7	to H8	to H9	to H10	to finish	h1 to h10 td
Units	6.26	4.00	4.04	4.07	4.17	4.29	4.43	4.57	4.71	4.84	5.55	39.06
Cumulative	6.26	10.26	14.30	18.37	22.54	26.83	31.26	35.83	40.54	45.38	50.93	24.34/ 26.59
51.40 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
Units	6.32	4.03	4.07	4.12	4.21	4.33	4.47	4.61	4.76	4.87	5.61	39.42
Cumulative	6.32	10.35	14.42	18.54	22.75	27.08	31.55	36.16	40.92	45.79	51.40	24.57/ 26.83
51.86 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.38	4.08	4.11	4.15	4.24	4.37	4.51	4.65	4.79	4.93	5.65	39.78
cumulative	6.38	10.46	14.57	18.72	22.96	27.33	31.84	36.49	41.28	46.21	51.86	24.79/ 27.07
52.33 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.43	4.12	4.15	4.18	4.28	4.41	4.55	4.69	4.84	4.98	5.70	40.14
cumulative	6.43	10.55	14.70	18.88	23.16	27.57	32.12	36.81	41.65	46.63	52.33	25.01/ 27.32
52.80 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.49	4.16	4.18	4.22	4.32	4.45	4.59	4.73	4.87	5.03	5.76	40.50
cumulative	6.54	10.67	14.86	19.14	23.52	27.99	32.56	37.24	42.01	47.04	52.80	25.24/ 27.56

Now that we have data,
we can make tools.

49.98 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.15	3.93	3.96	4.00	4.08	4.21	4.35	4.48	4.63	4.75	5.44	38.34
cumulative	6.15											23.89 / 26.09
fr 1st str td	5.50											
	from H1	3.93										
		from H2	3.96									
			from H3	4.00								
				from H4	4.08							
					from H5	4.21						
						from H6	4.35					
							from H7	4.48				

49.98 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.15	3.93	3.96	4.00	4.08	4.21	4.35	4.48	4.63	4.75	5.44	38.34
cumulative	6.15	10.08	14.04	18.04	22.12	26.33	30.68	35.16	39.79	44.54	49.98	23.89 / 26.09
fr 1st str td	5.50	9.43	13.39	17.39	21.47	25.68	30.03	34.51	39.14	43.89	49.33	
	from H1	3.93	7.89	11.89	15.97	20.18	24.53	29.01	33.64	38.39	43.83	non-fatigue state
		from H2	3.96	7.96	12.04	16.25	20.60	25.08	29.71	34.46	39.90	
			from H3	4.00	8.08	12.29	16.64	21.12	25.75	30.50	35.94	
				from H4	4.08	8.29	12.64	17.12	21.75	26.50	31.94	
					from H5	4.21	8.56	13.04	17.67	22.42	27.86	fatigue state
						from H6	4.35	8.83	13.46	18.21	23.65	
							from H7	4.48	9.11	13.86	19.30	

49.98 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.15	3.93	3.96	4.00	4.08	4.21	4.35	4.48	4.63	4.75	5.44	38.34
cumulative	6.15	10.08	14.04	18.04	22.12	26.33	30.68	35.16	39.79	44.54	49.98	23.89 / 26.09
fr 1st str td	5.50	9.43	13.39	17.39	21.47	25.68	30.03	34.51	39.14	43.89	49.33	
	from H1	3.93	7.89	11.89*	15.97	20.18	24.53	29.01	33.64	38.39	43.83	non-fatigue state
		from H2	3.96	7.96	12.04	16.25	20.60	25.08	29.71	34.46	39.90	
			from H3	4.00	8.08	12.29	16.64	21.12	25.75	30.50	35.94	
				from H4	4.08	8.29	12.64	17.12	21.75	26.50	31.94	
					from H5	4.21	8.56	13.04*	17.67	22.42	27.86	fatigue state
						from H6	4.35	8.83	13.46	18.21	23.65	
							from H7	4.48	9.11	13.86	19.30	

Specific applications for
400 meter hurdles

Secondary leg hurdling —formerly alt leg 4 str > 12.0m
Start week 9 (mid/late October)
low density : 1-2 sessions every 2 week cycle
continues all year.....

5 hurdles, progressive spacing, straight
progress all year

- 5 str, 5 str, 7 str, 7 str (L,L,L,L,L)
- 5 str, 5 str, 7 str, 9 str (L,L,L,L,L)
- 5 str, 5 str, 7 str, 9 str, 2 x 12 str curve (L,L,L,L,L,R,L)
- 5 str, 5 str, 7 str, 9 str, 4 x 12 str curve (L,L,L,L,L,R,L,R,L)



Secondary leg hurdling 1
5 hurdles, progressive spacing, straight
seek progressive spacing & aggressive t.o.

- 5 str, 5 str, 7 str, 7 str (L,L,L,L,L)
- 5 str, 5 str, 7 str, 9 str (L,L,L,L,L)

Secondary Leg Hurdling - Women

set up 5 hurdles (straight)

	I	II	III 13.30 / 8 >>
app	9.80 / 6	13.30 / 8	17.10 / 10
H1	0.00	0.00	0.00
H2	10.40 / 5	10.60 / 5 (10.60)	10.90 / 5
H3	21.20 / 5 (10.80)	21.60 / 5 (11.00)	22.20 / 5 (11.30)
H4	36.40 / 7 (15.20)	37.20 / 7 (15.60)	38.20 / 7 (16.00)
H5	52.70 / 7 (15.60)	57.50 / 9 (20.00)	58.70 / 9 (20.50)

Secondary Leg Hurdling - Men

set up 5 hurdles (straight)

	I	II	III 14.80 / 8 >>
app	11.00 / 6	14.80 / 8	19.00 / 10
H1	0.00	0.00	0.00
H2	11.40 / 5	11.70 / 5	11.80 / 5
H3	23.20 / 5 (11.80)	23.80 / 5 (12.10)	24.00 / 5 (12.20)
H4	39.40 / 7 (16.20)	40.50 / 7 (16.70)	40.90 / 7 (16.90)
H5	56.20 / 7 (16.60)	63.60 / 9 (23.10)	64.35 / 9 (23.45)

Secondary leg hurdling

Watch the posture and rhythm

Adjust / Revise/ Update spacing

Tool for specific training applications, use:
Ralph Mann – 400m Hurdles stride length data.
(Account for 1m + 2m td/to distance.)

- 13 step stride length: 2.47 meters
- 14 step stride length: 2.29 meters (4 str alt leg @ 12m)
- 15 step stride length: 2.14 meters
- 16 step stride length: 2.02 meters
- 17 step stride length: 1.90 meters



Mann allows advanced applications to SL Hurdling

set up 5 hurdles (straight) + 2 (or 4) hurdles into the turn

- 5 str, 5 str, 7 str, 9 str, 2 x 12 str curve (L,L,L,L,L,R,L)
- 5 str, 5 str, 7 str, 9 str, 4 x 12 str curve (L,L,L,L,L,R,L,R,L)

Application: 15 stride hurdler >>16 str / R lead.

Common challenge: Stabilize secondary (alternate) leg at race tempo.

Assume 12 str (could do 6, 8, or 10)

16 step stride length = 2.02 meters

1m touchdown + 2m takeoff + (12 x 2.02m) = x
3m + (24.24m) = 27.24m

place hurdles 27.2m apart for 12 str @ race tempo

Optimal hurdling (Winckler)

Optimal hurdling (winckler)

Start week 12-14 (mid/late November)

low density : 1 x every 2 week cycle ...once we start

Basic Set up: Hur 5-8 (second turn)

W 10 str (18m +) to 12 str (20m +) appr (M+2m)

Thoughtfully reduce spacing (.3-.75m per hur)

"Hustle" walk back – get back to the next run!

(1'40"-2'10") recovery btwn reps

Tempo = start to h3. Hit it.

Optimal hurdling (Winckler) - continued

- Develop/stabilize **specific hurdle rhythm**, even in early stages.
- Manage the volume accordingly.
- Emphasize quality/posture. Avoid slow & ugly.
- Develop sense of running harder as fatigue mounts
- Necessary for plotting a race model (first-timers)
- Apply race specific ranges for each athlete
Ex: 49.98 hurdler: 3.93-4.75 (11.89-13.86)

49.98 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.15	3.93	3.96	4.00	4.08	4.21	4.35	4.48	4.63	4.75	5.44	38.34
cumulative	6.15	10.08	14.04	18.04	22.12	26.33	30.68	35.16	39.79	44.54	49.98	23.89 / 26.09
fr 1st str td	5.50	9.43	13.39	17.39	21.47	25.68	30.03	34.51	39.14	43.89	49.33	
	from H1	3.93	7.89	11.89*	15.97	20.18	24.53	29.01	33.64	38.39	43.83	non-fatigue state
		from H2	3.96	7.96	12.04	16.25	20.60	25.08	29.71	34.46	39.90	
			from H3	4.00	8.08	12.29	16.64	21.12	25.75	30.50	35.94	
				from H4	4.08	8.29	12.64	17.12	21.75	26.50	31.94	
					from H5	4.21	8.56	13.04*	17.67	22.42	27.86	fatigue state
						from H6	4.35	8.83	13.46	18.21	23.65	
							from H7	4.48	9.11	13.86	19.30	

Optimal hurdling

Emphasize rhythm maintenance

For 49.98 training model seek 11.89 - 13.86 (3.93 - 4.75)

- 2 x H5-8 (back to h5)/ rest 5' / 2 x H5-8 (back to h5)// 12u
- 3 x H5-8 (back to h5)/ rest 5' / 2 x H5-8 (back to h5) // 15u
- 3 x H5-8 (back to h5)/ rest 5' / 3 x H5-8 (back to h5)// 18u

Optimal hurdling **variations:**

Set up Hur 5-10 (or Hur 5-11)

W 10 str (18m +) to 12 str (20m +) appr (M+2m)

Hit it!

Overlap the runs. Hustle back (1'20"-1'45")

- H5-8 (back to h6)/ H6-9 (back to h8)/ H8-fin / 5'rest/
H5-8 (back to h6)/ H6-9 // 14u + ri
- H5-8 (back to h6)/ H6-9 (back to h8)/ H8-fin / 5'rest/
H6-9 (back to h8)/ **H8-11*** (back to h9)/ H9-fin// 17u + ri
- H5-8 (back to h6)/ H6-9 (back to h8)/ H8-fin // 8u + ri

Optimal hurdling

- Have a target range
- The units 'create' a viable model (first unit = H1-H2)
- Emphasize restricting recoveries btwn reps (1'20"-1'45")
- Apply race models
49.98 requires 3.93 – 4.75 units / 11.89 – 13.86 for 3u runs

Race Modelling /
alternate with optimal hurdling (two week cycle)

Race Modelling

Start week 27-28 (mid/late February)

Low density – 1 x every 2 weeks once we start
Continues all year.....

Set up blocks and 7,8, or 9 hurdles

Thoughtfully reduce the spacing (.3-.75m per)

Race Modelling

Seek race pattern/ race intensity:

- 1 x start-H7 (1-2) 30.68
- 1 x start-H8 (2-3) 35.19
- 1 x start-H9 (2-3) 39.79

6-8 sessions from Feb to June
density: every other week

49.98 model	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	to finish	h1 to h10 td
units	6.15	3.93	3.96	4.00	4.08	4.21	4.35	4.48	4.63	4.75	5.44	38.34
cumulative	6.15	10.08	14.04	18.04	22.12	26.33	30.68	35.16	39.79	44.54	49.98	23.89 / 26.09
fr 1st str td	5.50	9.43	13.39	17.39	21.47	25.68	30.03	34.51	39.14	43.89	49.33	
	from H1	3.93	7.89	11.89	15.97	20.18	24.53	29.01	33.64	38.39	43.83	
		from H2	3.96	7.96	12.04	16.25	20.60	25.08	29.71	34.46	39.90	
			from H3	4.00	8.08	12.29	16.64	21.12	25.75	30.50	35.94	
				from H4	4.08	8.29	12.64	17.12	21.75	26.50	31.94	
					from H5	4.21	8.56	13.04	17.67	22.42	27.86	
						from H6	4.35	8.83	13.46	18.21	23.65	
							from H7	4.48	9.11	13.86	19.30	

Race Modelling (partner of Optimal Hurdling)

- Develops/stabilizes **specific hurdle rhythm**, even in early stages.
- Manage the volume accordingly.
- Emphasize quality/posture. Avoid slow / ugly.
- Emphasize rhythm maintenance (within unit ranges)
- Apply specific strategies for conditions
- Effectively compliments optimal hurdling after a race plan is plotted

Example : 49.98 hurdler: unit range 3.93-4.75

How does this fit in the week?

- A -- MONDAY
 - ACCELERATION DEVELOPMENT
 - 6-8 X 50M / 4-5 x 50m + 4-6 x SECONDARY LEG HURDLING
 - MULTI JUMPS
 - STRENGTH TRAINING
- B -- TUESDAY
 - MAXIMAL SPEED DEVELOPMENT – 4-6 x Vmax drill (40m/ 18 strides)
 - INTENSIVE TEMPO (1200M MAXIMUM, INTENSITY 85% + / (80-350M) GRASS / OPTIMAL HURDLING OR RACE MODELLING (2 wk cycle)
 - MULTI THROWS
- C -- WEDNESDAY - VOLUNTARY
 - ACTIVE RECOVERY
 - POOL TRAINING AND OR STRENGTH TRAINING
- A -- THURSDAY
 - ACCELERATION DEVELOPMENT 2-3 x (30,40,50) / 1 x (30,40,50) + HURDLE ACCELERATIONS : start- H₃, start – H₄, Start – H₅)
 - CIRCUIT
 - MULTI JUMPS
 - STRENGTH TRAIN
- B -- FRIDAY
 - MAXIMAL SPEED DEVELOPMENT – 4-6 x Vmax drill (40m/ 18 strides)
 - TEMPO RUNS 2 (1200M MAXIMUM, INTENSITY 85% + / 120-300M) GRASS
 - MULTI THROWS
- C -- SATURDAY
 - GENERAL STRENGTH
 - MULTI THROWS / MULTI JUMPS
- D -- SUNDAY – COMPLETE REST

- WEEK:36 (Apr 24 – 30, 2016) // Compete at LSU / Prep for specific needs
- SUNDAY, Apr 24 / Rest
- MONDAY, Apr 25 /
- 1:30 HUR – 3 x 3h accelerations, 3 x 10h speed hur
- 2:30 GROUP -- starts from blocks: 2x20m 1 x (40, 60, 80)
- G1&G2; 2 x fly 120 @ 400m pace
- 4x100 relay exchange #1 and #3
- 400H: 4 x 5h secondary leg hur (straight) // wd grass: 4 x 20m contrast w 4x10m marching runs , 8 x 6h (4 sgl, 4o/u)
- SLJ x 6 dbl / strength training / Abs
- TUESDAY, Apr 26 /
- 1:30 HUR – 2x 5h secondary leg (straight) / 2 x 150m fly, optimal hur: (H5-9, H 6-9, H8-fin, 1 x 100)
- 2:45 GROUP – Meet at track [Basic warm up]
- G1: 5 x fly 150 / 4' rest / [tempo: 18.9-19.3] / emph: posture!
- G2: 120, 90, 90, 60 / emph: Accelerate the run! 6019.0A race tempo w2 x 20m accel
- Multi throws: 6 x ohb, 6 x sgl // wd grass: 4 x 20m contrast w 4x10m marching runs , 8 x 6h (4 sgl, 4o/u)
- WEDNESDAY, Apr 27 / dress for pool. Bring ID
- 1:15 HUR - 3 x 3h accelerations / speed hur: 8,10,8 , 1 x 120
- 2:30 Meet at pool. Pool training / Strength Training
- THURSDAY, Apr 28 / 1:30 flex HUR – same as Wed
- 2:30 4-6 x Vmax G1&G2: starts from blocks – staggered start line / straight and curve
- 400h: 2x start – H3 from blocks / 1 x start – H7 race modelling
- 4 x 100 exchanges / wd grass: 8 x 20m marching runs, 8 x o/u
- FRIDAY, Apr 29 / 2:00 Bus Departs for LSU – training at track after arrival
- SATURDAY, Apr 30 / a.m shakeout Compete

Summer refinement :
3 day training cycle
4 day training cycle

Post NCAA, Post USATF, pre-Worlds

Summer refinement menu

3 or 4 day training cycles :

active rest

secondary leg hurdling

Optimal hurdling
strength training

rest

acceleration development

race modelling / tempo

speed development

- **SHAMIER LITTLE -- 2015 WC Planner // July 10 – August 1, 2015** all training begins with proper warm up and ends with proper warm down
- F July 10 4 x 5h secondary (straight) / start – H5, Start – H4, Start – H3
- Sa July 11 5 x150 / grass / 4' rest btwn // session 2 – pool mobility
- Su July 12 REST
- M July 13 300 (10'), 200 (5'), 120 / tempo: 12.8 per 100 (38.5, 26.0, 15.0)/ cold pool
- Tu July 14 Optimal Hurdles: [set up H 5-10] 2x H5-8 walk back btwn reps (5' after set), 2xH6-9 walk back (3'rest), 1 x H8-fin
- W July 15 warm up / 6 x50 EASY – grass barefoot / [strength train](#)
- Th July 16 4 x 5H secondary leg hur [M hur marks: H2 @ +3, H3 @ +7, H4 @ +12, H5@+17] // 1 x start – H7
- F **July 17** **travel to TORONTO** / Pan Am Games / processing / shake out on arrival - no training
- Sa July 18 2 x 40m blocks / 2 x 150m smooth and fast – feel good
- Su July 19 basic warm up / starts: 2 x start –H3
- M July 20 Day Before Competition warm up / Pan Am Games
- Tu **July 21** eat breakfast 7:30am / **400H semi** (12:00 noon) / Pan Am Games
- W **July 22** eat breakfast 8:30am/ shake out at noon / **400H final** (19:00) / Pan Am Games
- Th July 23 REST
- F July 24 mobility: 4 x sgl, 4 x o/u // marching runs: 4 x 20m contrast w 4x10m quick / Relay exchanges ?? // Pan Am Games
- Sa **July 25** afternoon shake out at 2pm or so / **4x400 Relay final** (21:40) / Pan Am Games
- Su **July 26** **travel**
- M July 27 REST- (train IF you did not run 4x400 relay!!!!)
- Tu July 28 warm up / 6 x50 EASY -- grass barefoot /
- W July 29 acceleration; 3-4 x 40-60m curve / [strength train](#)
- Th July 30 4 x 5H secondary leg hur [H2 @ +3, H3 @ +7, H4 @ +12, H5@+17] /3 x 150, 1 x 120 (4' rest btwn) / cold pool
- F July 31 [strength train](#)
- Sa Aug 1 Optimal hurdles : 1 x (H4-8, H5-9, H 8-10) walk back btwn reps / Pool

Note Aug 12 leave for Japan / Aug 23 R1 400h WC

COMPETITION

is the most specific rehearsal of all

special endurance built in (double)

- SPRINT FIRST
 - speed development
 - acceleration development
 - specific hurdle rhythm
 - intensive tempo
 - hurdle technique

de-emphasize extensive tempo

Train for 200m and 4x100 relay
with specifically designed adaptations

- secondary leg hurdling
- “optimal hurdling” (Winckler)
- race modelling
- competition

I need notes to keep things straight

MEN	Fwd in Blocks	Strides to H1	Optimal strides btwn H1 - H2	Optimal Takeoff Leg	comments		
Brander	L	22	14	L (R lead)	22/14/14 ok after feb 10 trng		
Coleman	L	20	13	L (R lead)	see pr race at Regional 2014	49.60 NC r1	
Davis	L (new)	23	15	R (L lead)	23/15/15 ok after feb 10 trng		
Graham	R	22	14	L (R Lead)	22/14 ok after feb 10 trng		
Grant	L	22	14	L (R lead)	verify	49.36 US4/ 49.62	
Izu	R	21	14	L (R lead)	verify 21 strides to H1		
Mehl	L	22	14	L (R lead)	22/14/14 ok after feb 10 trng		
Thomas	L (new)	23	14	R (L lead)	23/14 ok for now after feb 10 trng		
	400m HUR 2016						
WOMEN	Fwd in Blocks	Strides to H1	Optimal strides btwn H1 - H2	Optimal Takeoff Leg			
Bedrich	R	25	17	L (R lead)	25/17/17 RRR ok after feb 10 trng		
Crear	R	24	16	R (L lead)	24/16/16 LRL ok after feb 10 trng	58.86	
Lawrence			17?				
Little	R	23	15	L (R lead)		53.51	

Know your target

[illegible]

If you want to be inspired, binge watch:

KEVIN YOUNG WR 47.69 1992 OG

His work from H6-H8 is breathtaking

He shows us how to run the event and how to coach the event



Placing a 400m Hurdler? G1 or G2?

100m hurdling aptitude/responsibility
holds the key.

Let's focus on the **G2** type of athlete