Men's 400m Hurdles Touchdown Times - by athletics meeting

LAST UPDATE: 12-Nov-23

2023 Prefontaine Classic (Eugene, OR)

FINAL date 16-Sep-23

Omega Timing (2023) - diamond league race analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.74	9.40	13.10	16.86	20.68		24.61	28.60	32.70	36.97	41.36		46.39	5 / 1			
reaction time	0.154	interval		3.66	3.70	3.76	3.82		3.93	3.99	4.10	4.27	4.39	5.03			11.12	11.74	12.76
		velocity	7.84	9.56	9.46	9.31	9.16		8.91	8.77	8.54	8.20	7.97	7.95	8.62		9.44	8.94	8.23
H1 lead leg	R	strides	20	13	13	12	12		13	13	13	13	13	17	152				
Warholm, Karsten (NOR) (19		time	5.59	9.17	12.80	16.46	20.22		24.10	28.12	32.37	36.62	41.18		46.53	7 / 2			
reaction time	0.135	interval		3.58	3.63	3.66	3.76		3.88	4.02	4.25	4.25	4.56	5.35			10.87	11.66	13.06
		velocity	8.05	9.78	9.64	9.56	9.31		9.02	8.71	8.24	8.24	7.68	7.48	8.60		9.66	9.01	8.04
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
McMaster, Kyron (IVB) (1997		time	5.58	9.11	12.71	16.42	20.29		24.26	28.35	32.59	37.11	41.75		47.31	6 / 3			
reaction time	0.133	interval		3.53	3.60	3.71	3.87		3.97	4.09	4.24	4.52	4.64	5.56			10.84	11.93	13.40
		velocity	8.06	9.92	9.72	9.43	9.04		8.82	8.56	8.25	7.74	7.54	7.19	8.45		9.69	8.80	7.84
H1 lead leg	L	strides	21	13	13	12	13		13	13	13	14	14	17	156				
dos Santos, Alison (BRA) (2		time	5.79	9.49	13.20	16.94	20.84		24.85	28.98	33.26	37.65	42.12		47.44	4 / 4			
reaction time	0.172	interval		3.70	3.71	3.74	3.90		4.01	4.13	4.28	4.39	4.47	5.32			11.15	12.04	13.14
		velocity	7.77	9.46	9.43	9.36	8.97		8.73	8.47	8.18	7.97	7.83	7.52	8.43		9.42	8.72	7.99
H1 lead leg	L	strides	20			12	12		12	13	13	13	13	16	124				
Happio, Wilfried (FRA) (1998		time	5.88	9.56	13.26	17.03	20.93		24.96	29.07	33.36	37.91	42.52		47.83	3 / 5			
reaction time	0.173	interval		3.68	3.70	3.77	3.90		4.03	4.11	4.29	4.55	4.61	5.31			11.15	12.04	13.45
		velocity	7.65	9.51	9.46	9.28	8.97		8.68	8.52	8.16	7.69	7.59	7.53	8.36		9.42	8.72	7.81
H1 lead leg	L	strides	20			13	13		13	13	13	15	15	18	133				
Vaillant, Ludvy (FRA) (1995)		time	5.85	9.49	13.18	16.88	20.67		24.61	28.73	33.04	37.54	42.26		47.93	1 / 6			
reaction time	0.138	interval		3.64	3.69	3.70	3.79		3.94	4.12	4.31	4.50	4.72	5.67			11.03	11.85	13.53
		velocity	7.69	9.62	9.49	9.46	9.23		8.88	8.50	8.12	7.78	7.42	7.05	8.35		9.52	8.86	7.76
H1 lead leg	R	strides	21			13	13		13	14	14	14	14	18	134				
Mägi, Rasmus (EST) (1992)		time	5.96	9.70	13.46	17.26	21.18		25.26	29.46	33.82	38.28	42.74		47.99	9 / 7			
reaction time	0.155	interval		3.74	3.76	3.80	3.92		4.08	4.20	4.36	4.46	4.46	5.25			11.30	12.20	13.28
		velocity	7.55	9.36	9.31	9.21	8.93		8.58	8.33	8.03	7.85	7.85	7.62	8.34		9.29	8.61	7.91
H1 lead leg	R	strides	21			13	13		13	13	14				87				
Bassitt, Trevor (USA) (1998)		time	5.89	9.70	13.54	17.53	21.61		25.76	29.99	34.34	38.81	43.29		48.42	8 / 8			
reaction time	0.154	interval		3.81	3.84	3.99	4.08		4.15	4.23	4.35	4.47	4.48	5.13			11.64	12.46	13.30
		velocity	7.64	9.19	9.11	8.77	8.58		8.43	8.27	8.05	7.83	7.81	7.80	8.26		9.02	8.43	7.89
H1 lead leg	R	strides	20	13	13	13	13		13	13	13				111				
Allen, CJ (USA) (1995)		time	5.70	9.33	13.05	16.85	20.75		24.77	28.94	33.31	37.93	42.73		48.62	2 / 9			
reaction time	0.137	interval		3.63	3.72	3.80	3.90		4.02	4.17	4.37	4.62	4.80	5.89			11.15	12.09	13.79
		velocity	7.89	9.64	9.41	9.21	8.97		8.71	8.39	8.01	7.58	7.29	6.79	8.23		9.42	8.68	7.61
H1 lead leg	L	strides	20			13	13		13	14	14	14	14		115				

2023 Weltklasse (Zürich, SUI)

FINAL date 31-Aug-23

Omega Timing (2023) - diamond league race analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997		time	5.56	9.05	12.66	16.39	20.25		24.26	28.39	32.72	37.25	41.90		47.27	6 / 1			
reaction time	0.149	interval		3.49	3.61	3.73	3.86		4.01	4.13	4.33	4.53	4.65	5.37			10.83	12.00	13.51
		velocity	8.09	10.03	9.70	9.38	9.07		8.73	8.47	8.08	7.73	7.53	7.45	8.46		9.70	8.75	7.77
H1 lead leg	L	strides	21	13	13	13	13		13	13	14	14	14	17.2	158.2				
Warholm, Karsten (NOR) (19		time	5.63	9.23	12.94	16.69	20.55		24.50	28.55	32.78	37.30	41.91		47.30	7 / 2			
reaction time	0.169	interval		3.60	3.71	3.75	3.86		3.95	4.05	4.23	4.52	4.61	5.39			11.06	11.86	13.36
		velocity	7.99	9.72	9.43	9.33	9.07		8.86	8.64	8.27	7.74	7.59	7.42	8.46		9.49	8.85	7.86
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
dos Santos, Alison (BRA) (2		time	5.80	9.39	13.04	16.77	20.66		24.66	28.84	33.18	37.66	42.22		47.62	5 / 3			
reaction time	0.162	interval		3.59	3.65	3.73	3.89		4.00	4.18	4.34	4.48	4.56	5.40			10.97	12.07	13.38
		velocity	7.76	9.75	9.59	9.38	9.00		8.75	8.37	8.06	7.81	7.68	7.41	8.40		9.57	8.70	7.85
H1 lead leg	L	strides	20	13			12		12	13			13	16.2	99.2				
Allen, CJ (USA) (1995)		time	5.64	9.23	12.94	16.74	20.64		24.63	28.73	33.07	37.63	42.36		48.28	3 / 4			
reaction time	0.141	interval		3.59	3.71	3.80	3.90		3.99	4.10	4.34	4.56	4.73	5.92			11.10	11.99	13.63
		velocity	7.98	9.75	9.43	9.21	8.97		8.77	8.54	8.06	7.68	7.40	6.76	8.29		9.46	8.76	7.70
H1 lead leg	L	strides	20	13			13		13	13			14	18	104				
Happio, Wilfried (FRA) (1998		time	6.09	9.69	13.37	17.16	21.08		25.15	29.33	33.73	38.35	43.05		48.42	2 / 5			
reaction time	0.469	interval		3.60	3.68	3.79	3.92		4.07	4.18	4.40	4.62	4.70	5.37			11.07	12.17	13.72
		velocity	7.39	9.72	9.51	9.23	8.93		8.60	8.37	7.95	7.58	7.45	7.45	8.26		9.49	8.63	7.65
H1 lead leg	L	strides	20	13			13		13	13			15	17.2	104.2				
Bassitt, Trevor (USA) (1998)		time	5.83	9.55	13.33	17.13	21.09		25.27	29.55	34.02	38.72	43.62		49.39	8 / 6			

reaction time	0.171	interval		3.72	3.78	3.80	3.96	4.18	4.28	4.47	4.70	4.90	5.77			11.30	12.42	14.07
		velocity	7.72	9.41	9.26	9.21	8.84	8.37	8.18	7.83	7.45	7.14	6.93	8.10		9.29	8.45	7.46
H1 lead leg	R	strides	20	13	13	13	13	13	13	13				111				
Bonvin, Julien (SUI) (1999)		time	5.76	9.44	13.22	17.10	21.12	25.37	29.85	34.53	39.50	44.57		50.34	1 / 7			
reaction time	0.149	interval		3.68	3.78	3.88	4.02	4.25	4.48	4.68	4.97	5.07	5.77			11.34	12.75	14.72
		velocity	7.81	9.51	9.26	9.02	8.71	8.24	7.81	7.48	7.04	6.90	6.93	7.95		9.26	8.24	7.13
H1 lead leg	L	strides	21	13			13	14	14					75				
Clarke, Roshawn (JAM) (200		time	5.70	9.48	13.31	17.18	21.21	26.79						dnf	4 / --			
reaction time	0.175	interval		3.78	3.83	3.87	4.03	5.58								11.48		
		velocity	7.89	9.26	9.14	9.04	8.68	6.27								9.15		
H1 lead leg	L	strides	22	14			14							50				

2023 World Athletics Championships (Budapest, HUN) (TV Analysis

FINAL

date 23-Aug-23

Henson (2023) - Athlete First: 2023 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.81	9.46	12.90	16.52	20.29		24.25	28.29	32.50	36.93	41.61		46.89	7 / 1			
reaction time	0.171	interval		3.65	3.44	3.62	3.77		3.96	4.04	4.21	4.43	4.68	5.28			10.71	11.77	13.32
		velocity	7.75	9.59	10.17	9.67	9.28		8.84	8.66	8.31	7.90	7.48	7.58	8.53		9.80	8.92	7.88
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
McMaster, Kyron (IVB) (1997		time	5.67	9.33	12.80	16.45	20.26		24.28	28.39	32.78	37.33	41.98		47.34	8 / 2			
reaction time	0.151	interval		3.66	3.47	3.65	3.81		4.02	4.11	4.39	4.55	4.65	5.36			10.78	11.94	13.59
		velocity	7.94	9.56	10.09	9.59	9.19		8.71	8.52	7.97	7.69	7.53	7.46	8.45		9.74	8.79	7.73
H1 lead leg	L	strides	21	13	13	13	13		13	13	14	14	14	17.7	158.7				
Benjamin, Rai (USA) (1997)		time	5.64	9.37	12.81	16.42	20.29		24.26	28.31	32.59	37.13	41.98		47.56	6 / 3			
reaction time	0.168	interval		3.73	3.44	3.61	3.87		3.97	4.05	4.28	4.54	4.85	5.58			10.78	11.89	13.67
		velocity	7.98	9.38	10.17	9.70	9.04		8.82	8.64	8.18	7.71	7.22	7.17	8.41		9.74	8.83	7.68
H1 lead leg	R	strides	20	13	12	12	12		13	13	13	13	14	17	152				
Clarke, Roshawn (JAM) (200		time	5.71	9.46	12.97	16.65	20.52			28.96	33.40	37.97	42.68		48.07	5 / 4			
reaction time	0.164	interval		3.75	3.51	3.68	3.87			8.44	4.44	4.57	4.71	5.39			10.94	12.31	13.72
		velocity	7.88	9.33	9.97	9.51	9.04			8.29	7.88	7.66	7.43	7.42	8.32		9.60	8.53	7.65
H1 lead leg	R	strides	21	13	13	13	13		14		15	15	15	18.2	150.2				
dos Santos, Alison (BRA) (2		time	5.81	9.56	12.96	16.62	20.49		24.48	28.60	32.90	37.55	42.21		48.10	9 / 5			
reaction time	0.164	interval		3.75	3.40	3.66	3.87		3.99	4.12	4.30	4.65	4.66	5.89			10.81	11.98	13.61
		velocity	7.75	9.33	10.29	9.56	9.04		8.77	8.50	8.14	7.53	7.51	6.79	8.32		9.71	8.76	7.71
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	14	14	17.2	152.2				
Bassitt, Trevor (USA) (1998)		time	5.93	9.78	13.33	17.05	20.92			29.16	33.56	38.20	42.98		48.22	3 / 6			
reaction time	0.164	interval		3.85	3.55	3.72	3.87			8.24	4.40	4.64	4.78	5.24			11.12	12.11	13.82
		velocity	7.59	9.09	9.86	9.41	9.04			8.50	7.95	7.54	7.32	7.63	8.30		9.44	8.67	7.60
H1 lead leg	R	strides	20	13	13	13	13				13	13	14	17	129				
Mägi, Rasmus (EST) (1992)		time	6.04	9.86	13.45	17.18	21.09			29.36	33.83	38.41	43.09		48.33	4 / 7			
reaction time	0.161	interval		3.82	3.59	3.73	3.91			8.27	4.47	4.58	4.68	5.24			11.14	12.18	13.73
		velocity	7.45	9.16	9.75	9.38	8.95			8.46	7.83	7.64	7.48	7.63	8.28		9.43	8.62	7.65
H1 lead leg	R	strides	21	13	13	13	13				14	14	14	17.2	132.2				
Abuaku, Joshua (GER) (1996		time	5.97	9.83	13.45	17.22	21.13			29.56	34.03	38.64	43.34		48.53	2 / 8			
reaction time	0.156	interval		3.86	3.62	3.77	3.91			8.43	4.47	4.61	4.70	5.19			11.25	12.34	13.78
		velocity	7.54	9.07	9.67	9.28	8.95			8.30	7.83	7.59	7.45	7.71	8.24		9.33	8.51	7.62
H1 lead leg	L	strides	20	13		13	13				14	14	14	18	119				

Semi-Final 3

date 21-Aug-23

Henson (2023) - Athlete First: 2023 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.77	9.44	13.08	16.61	20.42		24.36	28.42	32.63	37.25	41.97		47.09	5 / 1			
reaction time	0.162	interval		3.67	3.64	3.53	3.81		3.94	4.06	4.21	4.62	4.72	5.12			10.84	11.81	13.55
		velocity	7.80	9.54	9.62	9.92	9.19		8.88	8.62	8.31	7.58	7.42	7.81	8.49		9.69	8.89	7.75
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17	158				
Clarke, Roshawn (JAM) (200		time	5.77	9.48	13.08	16.61	20.42		24.49	28.66	33.01	37.54	42.14		47.34	7 / 2			
reaction time	0.198	interval		3.71	3.60	3.53	3.81		4.07	4.17	4.35	4.53	4.60	5.20	**WJR**		10.84	12.05	13.48
		velocity	7.80	9.43	9.72	9.92	9.19		8.60	8.39	8.05	7.73	7.61	7.69	8.45		9.69	8.71	7.79
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.5	164.5				
Bassitt, Trevor (USA) (1998)		time	5.87	9.71	13.41	17.08	20.92		24.87	29.00	33.28		42.37		47.38	9 / 3			
reaction time	0.187	interval		3.84	3.70	3.67	3.84		3.95	4.13	4.28		9.09	5.01	**PB**		11.21	11.92	13.37
		velocity	7.67	9.11	9.46	9.54	9.11		8.86	8.47	8.18		7.70	7.98	8.44		9.37	8.81	7.85
H1 lead leg	R	strides	20	13	13	13	13		13	13	13			17	128				
Abuaku, Joshua (GER) (1996		time	5.90	9.68	13.31	16.92	20.79		24.83	29.19	33.63		43.01		48.39	8 / 4			
reaction time	0.179	interval		3.78	3.63	3.61	3.87		4.04	4.36	4.44		9.38	5.38			11.02	12.27	13.82
		velocity	7.63	9.26	9.64	9.70	9.04		8.66	8.03	7.88		7.46	7.43	8.27		9.53	8.56	7.60
H1 lead leg	L	strides	20	13	13	13	13		13	14	14			18	131				

Sibilio, Alessandro (ITA) (19	time	5.99	9.94		17.55	21.45			29.83	34.30		43.79		48.43	2 / 5				
reaction time 0.152	interval		3.95		7.61	3.90			8.38	4.47		9.49	4.64			11.56	12.28	13.96
	velocity	7.51	8.86		9.20	8.97			8.35	7.83		7.38	8.62	8.26		9.08	8.55	7.52
H1 lead leg R	strides	21	13			13				15			18	80				
Copello, Yasmani (TUR) (19	time	5.97	9.77		17.23	21.12			29.57	34.03	38.64	43.25		48.66	3 / 6				
reaction time 0.220	interval		3.80		7.46	3.89			8.45	4.46	4.61	4.61	5.41			11.26	12.34	13.68
	velocity	7.54	9.21		9.38	9.00			8.29	7.84	7.59	7.59	7.39	8.22		9.33	8.51	7.67
H1 lead leg R	strides	20	13			13				14	14	14	17.5	105.5				
Happio, Wilfried (FRA) (199	time	5.94	9.67	13.31	16.91	20.72		24.66	28.76	33.40		43.31		48.83	6 / 7				
reaction time 0.176	interval		3.73	3.64	3.60	3.81		3.94	4.10	4.64		9.91	5.52			10.97	11.85	14.55
	velocity	7.58	9.38	9.62	9.72	9.19		8.88	8.54	7.54		7.06	7.25	8.19		9.57	8.86	7.22
H1 lead leg L	strides	20	13	13	13	13		13	13	14			17.7	129.7				
Drummond, Gerald (CRC) (1	time	5.93	9.81		17.48	21.59			30.39	34.86		44.24		49.31	4 / 8				
reaction time 0.169	interval		3.88		7.67	4.11			8.80	4.47		9.38	5.07			11.55	12.91	13.85
	velocity	7.59	9.02		9.13	8.52			7.95	7.83		7.46	7.89	8.11		9.09	8.13	7.58
H1 lead leg L	strides	21	14			14				16			18	83				

Semi-Final 2

date 21-Aug-23

Henson (2023) - Athlete First: 2023 year end hurdle report

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)	time	5.77	9.54	13.08	16.92	20.82		24.82	28.93	33.21	37.61	42.14		47.24	7 / 1			
reaction time 0.169	interval		3.77	3.54	3.84	3.90		4.00	4.11	4.28	4.40	4.53	5.10			11.15	12.01	13.21
	velocity	7.80	9.28	9.89	9.11	8.97		8.75	8.52	8.18	7.95	7.73	7.84	8.47		9.42	8.74	7.95
H1 lead leg R	strides	20	13	13	13	13		13	13	13	13	13	16.5	153.5				
dos Santos, Alison (BRA) (2	time	5.87	9.61	13.24	16.78	20.65		24.76	29.00	33.28	37.65	42.17		47.38	8 / 2			
reaction time 0.182	interval		3.74	3.63	3.54	3.87		4.11	4.24	4.28	4.37	4.52	5.21			10.91	12.22	13.17
	velocity	7.67	9.36	9.64	9.89	9.04		8.52	8.25	8.18	8.01	7.74	7.68	8.44		9.62	8.59	7.97
H1 lead leg L	strides	20	13	12	12	12		13	13	13	13	13	16.2	150.2				
Vaillant, Ludvy (FRA) (1995)	time	5.90	9.64	13.31	16.85	20.68		24.69	28.87	33.35	37.94	42.88		48.48	6 / 3			
reaction time 0.194	interval		3.74	3.67	3.54	3.83		4.01	4.18	4.48	4.59	4.94	5.60			10.95	12.02	14.01
	velocity	7.63	9.36	9.54	9.89	9.14		8.73	8.37	7.81	7.63	7.09	7.14	8.25		9.59	8.74	7.49
H1 lead leg R	strides	21	13	13	13	13		13	14	14	14	15	18	161				
Kurokawa, Kazuki (JPN) (20	time	5.77	9.47	13.21	16.88	20.89		25.09	29.33	33.81	38.44	43.21		48.58	5 / 4			
reaction time 0.144	interval		3.70	3.74	3.67	4.01		4.20	4.24	4.48	4.63	4.77	5.37	PB		11.11	12.45	13.88
	velocity	7.80	9.46	9.36	9.54	8.73		8.33	8.25	7.81	7.56	7.34	7.45	8.23		9.45	8.43	7.56
H1 lead leg L	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Agyekum, Emil (GER) (1999)	time	6.10	9.98	13.68	17.28	21.12			29.56	34.06	38.70	43.41		48.71	3 / 5			
reaction time 0.196	interval		3.88	3.70	3.60	3.84			8.44	4.50	4.64	4.71	5.30	PB		11.18	12.28	13.85
	velocity	7.38	9.02	9.46	9.72	9.11			8.29	7.78	7.54	7.43	7.55	8.21		9.39	8.55	7.58
H1 lead leg L	strides	21	13	13	13	13				14	15	15	18	135				
Mukhobe, Wiseman Were (K	time	5.94	9.81	13.61	17.35	21.55		25.82	30.26	34.83		44.01		49.40	9 / 6			
reaction time 0.196	interval		3.87	3.80	3.74	4.20		4.27	4.44	4.57		9.18	5.39			11.41	12.91	13.75
	velocity	7.58	9.04	9.21	9.36	8.33		8.20	7.88	7.66		7.63	7.42	8.10		9.20	8.13	7.64
H1 lead leg R	strides	22	14	14	13	14		14	15				19	125				
Xie Zhiyu (CHN) (2000)	time	6.14	10.11	13.98	17.82	21.89			30.56	35.07		44.48		49.57	2 / 7			
reaction time 0.189	interval		3.97	3.87	3.84	4.07			8.67	4.51		9.41	5.09			11.68	12.74	13.92
	velocity	7.33	8.82	9.04	9.11	8.60			8.07	7.76		7.44	7.86	8.07		8.99	8.24	7.54
H1 lead leg L	strides	21		13	13	13				14			17	91				
Bonvin, Julien (SUI) (1999)	time	5.90	9.67	13.38	17.05	20.99		25.29	29.66	34.30	39.11	44.08		49.75	4 / 8			
reaction time 0.175	interval		3.77	3.71	3.67	3.94		4.30	4.37	4.64	4.81	4.97	5.67			11.15	12.61	14.42
	velocity	7.63	9.28	9.43	9.54	8.88		8.14	8.01	7.54	7.28	7.04	7.05	8.04		9.42	8.33	7.28
H1 lead leg L	strides	20	13	13	13	13		14	14	15	15		18	148				

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		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997	time	5.73	9.46	13.06	16.63	20.53		24.56	28.67	33.01	37.52	42.17		47.72	8 / 1			
reaction time 0.168	interval		3.73	3.60	3.57	3.90		4.03	4.11	4.34	4.51	4.65	5.55			10.90	12.04	13.50
	velocity	7.85	9.38	9.72	9.80	8.97		8.68	8.52	8.06	7.76	7.53	7.21	8.38		9.63	8.72	7.78
H1 lead leg L	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Mägi, Rasmus (EST) (1992)	time	6.07	10.03	13.77	17.53	21.43		25.50	29.68	34.03		43.13		48.30	7 / 2			
reaction time 0.180	interval		3.96	3.74	3.76	3.90		4.07	4.18	4.35		9.10	5.17			11.46	12.15	13.45
	velocity	7.41	8.84	9.36	9.31	8.97		8.60	8.37	8.05		7.69	7.74	8.28		9.16	8.64	7.81
H1 lead leg R	strides	21	13	13	13	13		13	13	14			17.5	130.5				
Allen, CJ (USA) (1995)	time	5.83	9.73	13.43	17.07	20.93		25.00	29.23	33.56	38.17	42.96		48.44	6 / 3			
reaction time 0.152	interval		3.90	3.70	3.64	3.86		4.07	4.23	4.33	4.61	4.79	5.48			11.24	12.16	13.73
	velocity	7.72	8.97	9.46	9.62	9.07		8.60	8.27	8.08	7.59	7.31	7.30	8.26		9.34	8.63	7.65
H1 lead leg L	strides	20	13	13	13	13		13	14	14	14	14	17.2	158.2				

Hyde, Jaheel (JAM) (1997)		time	5.73	9.43	13.08	16.63	20.50	24.63	28.86	33.36	38.00	42.86		48.49	5 / 4			
reaction time	0.150	interval		3.70	3.65	3.55	3.87	4.13	4.23	4.50	4.64	4.86	5.63			10.90	12.23	14.00
		velocity	7.85	9.46	9.59	9.86	9.04	8.47	8.27	7.78	7.54	7.20	7.10	8.25		9.63	8.59	7.50
H1 lead leg	L	strides	22	13	13	13	13	14	14	14	14	15	18.7	163.7				
Watrin, Julien (BEL) (1992)		time	5.90	9.66	13.43	17.13	21.00	25.13	29.46	34.16	38.83	43.55		48.94	3 / 5			
reaction time	0.205	interval		3.76	3.77	3.70	3.87	4.13	4.33	4.70	4.67	4.72	5.39			11.23	12.33	14.09
		velocity	7.63	9.31	9.28	9.46	9.04	8.47	8.08	7.45	7.49	7.42	7.42	8.17		9.35	8.52	7.45
H1 lead leg	R	strides	20	13	13	13	13	13		14	15	15	18	147				
Nathaniel, Ezekiel (NGR) (20		time	6.06	9.97	13.63	17.33	21.26	25.40	29.73	34.23		43.67		49.22	9 / 6			
reaction time	0.209	interval		3.91	3.66	3.70	3.93	4.14	4.33	4.50		9.44	5.55			11.27	12.40	13.94
		velocity	7.43	8.95	9.56	9.46	8.91	8.45	8.08	7.78		7.42	7.21	8.13		9.32	8.47	7.53
H1 lead leg	R	strides	21	13	13	13	13	13	14	14			17	131				
Hemeida, Bassem (QAT) (20		time	5.96	9.80	13.63	17.36	21.26	25.50	29.83	34.40	39.06	43.97		49.50	4 / 7			
reaction time	0.172	interval		3.84	3.83	3.73	3.90	4.24	4.33	4.57	4.66	4.91	5.53			11.40	12.47	14.14
		velocity	7.55	9.11	9.14	9.38	8.97	8.25	8.08	7.66	7.51	7.13	7.23	8.08		9.21	8.42	7.43
H1 lead leg	R	strides	21	13	14	13	13	14		14	14	15	17.7	148.7				

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			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.83	9.60	13.46	17.37	21.23		25.33	29.40	33.66	38.23	42.96		48.35	5 / 1			
reaction time	0.176	interval		3.77	3.86	3.91	3.86		4.10	4.07	4.26	4.57	4.73	5.39			11.54	12.03	13.56
		velocity	7.72	9.28	9.07	8.95	9.07		8.54	8.60	8.22	7.66	7.40	7.42	8.27		9.10	8.73	7.74
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16.7	153.7				
Hyde, Jaheel (JAM) (1997)		time	5.80	9.46	13.23	17.00	20.83		25.03	29.26	33.80	38.40	43.20		48.63	9 / 2			
reaction time	0.182	interval		3.66	3.77	3.77	3.83		4.20	4.23	4.54	4.60	4.80	5.43			11.20	12.26	13.94
		velocity	7.76	9.56	9.28	9.28	9.14		8.33	8.27	7.71	7.61	7.29	7.37	8.23		9.38	8.56	7.53
H1 lead leg	L	strides	22	13	13	13	13		14	14	14	14	15	18	163				
Kurokawa, Kazuki (JPN) (20		time	5.73	9.46	13.20	17.00	20.83		25.03	29.36	33.83	38.46	43.23		48.71	3 / 3			
reaction time	0.158	interval		3.73	3.74	3.80	3.83		4.20	4.33	4.47	4.63	4.77	5.48			11.27	12.36	13.87
		velocity	7.85	9.38	9.36	9.21	9.14		8.33	8.08	7.83	7.56	7.34	7.30	8.21		9.32	8.50	7.57
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18.7	164.7				
Drummond, Gerald (CRC) (1		time	5.86	9.76	13.63	17.60	21.58		25.74	30.03	34.46		43.60		48.73	8 / 4			
reaction time	0.220	interval		3.90	3.87	3.97	3.98		4.16	4.29	4.43		9.14	5.13			11.74	12.43	13.57
		velocity	7.68	8.97	9.04	8.82	8.79		8.41	8.16	7.90		7.66	7.80	8.21		8.94	8.45	7.74
H1 lead leg	L	strides	21	14	14	14	14		14	14	15			18	138				
Copello, Yasmani (TUR) (19		time	6.00	9.83	13.66	17.56	21.50		25.63	29.96	34.40	38.93	43.56		48.92	6 / 5			
reaction time	0.244	interval		3.83	3.83	3.90	3.94		4.13	4.33	4.44	4.53	4.63	5.36			11.56	12.40	13.60
		velocity	7.50	9.14	9.14	8.97	8.88		8.47	8.08	7.88	7.73	7.56	7.46	8.18		9.08	8.47	7.72
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17.5	158.5				
Agyekum, Emil (GER) (1999)		time	6.16		13.83		21.43			29.86	34.33	39.03	43.76		49.00	1 / 6			
reaction time	0.232	interval			7.67		7.60			8.43	4.47	4.70	4.73	5.24					13.90
		velocity	7.31		9.13		9.21			8.30	7.83	7.45	7.40	7.63	8.16				7.55
H1 lead leg	R	strides	20						13		14	15	15	18	95				

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			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abuaku, Joshua (GER) (1996		time	6.03	9.83	13.50	17.27	21.03		25.10		33.77	38.36	43.03		48.32	5 / 1			
reaction time	0.207	interval		3.80	3.67	3.77	3.76		4.07		8.67	4.59	4.67	5.29	**PB**		11.24		
		velocity	7.46	9.21	9.54	9.28	9.31		8.60		8.07	7.63	7.49	7.56	8.28		9.34		
H1 lead leg	L	strides	20	13	13	13	13		13			14	14	18	131				
Allen, CJ (USA) (1995)		time	5.90	9.73	13.50	17.36	21.13		25.17		33.70	38.23	42.90		48.36	9 / 2			
reaction time	0.167	interval		3.83	3.77	3.86	3.77		4.04		8.53	4.53	4.67	5.46			11.46		
		velocity	7.63	9.14	9.28	9.07	9.28		8.66		8.21	7.73	7.49	7.33	8.27		9.16		
H1 lead leg	L	strides	20	13	13	13	13		13			14	14	17	130				
Clarke, Roshawn (JAM) (200		time	5.83	9.70	13.53	17.53	21.43		25.46	29.67	33.90	38.36	43.06		48.39	3 / 3			
reaction time	0.183	interval		3.87	3.83	4.00	3.90		4.03	4.21	4.23	4.46	4.70	5.33			11.70	12.14	13.39
		velocity	7.72	9.04	9.14	8.75	8.97		8.68	8.31	8.27	7.85	7.45	7.50	8.27		8.97	8.65	7.84
H1 lead leg	L	strides	22	14	14	13	14		14	14	14	15	15	18.2	167.2				
Nathaniel, Ezekiel (NGR) (20		time	6.10	10.03	13.83	17.56	21.33		25.33	29.53	33.90	38.53	43.23		48.47	8 / 4			
reaction time	0.210	interval		3.93	3.80	3.73	3.77		4.00	4.20	4.37	4.63	4.70	5.24			11.46	11.97	13.70
		velocity	7.38	8.91	9.21	9.38	9.28		8.75	8.33	8.01	7.56	7.45	7.63	8.25		9.16	8.77	7.66
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14	17	158				
Watrin, Julien (BEL) (1992)		time	5.93	9.70	13.46	17.30	21.06		25.07		33.63	38.27	43.10		48.72	6 / 5			
reaction time	0.230	interval		3.77	3.76	3.84	3.76		4.01		8.56	4.64	4.83	5.62			11.37		
		velocity	7.59	9.28	9.31	9.11	9.31		8.73		8.18	7.54	7.25	7.12	8.21		9.23		
H1 lead leg	R	strides	20	13	13	13	13		13			14	14	19	132				

Lambrughi, Mario (ITA) (199	time	5.90	9.86	13.66	17.56	21.40		25.53		34.40	39.03	43.73		49.05	1 / 6			
reaction time 0.129	interval		3.96	3.80	3.90	3.84		4.13		8.87	4.63	4.70	5.32			11.66		
	velocity	7.63	8.84	9.21	8.97	9.11		8.47		7.89	7.56	7.45	7.52	8.15		9.01		
H1 lead leg R	strides	22	14	14	14	14		14			15	15	18.5	140.5				

Heat 3

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		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Happio, Wilfried (FRA) (1998	time	5.93	9.80	13.60	17.43	21.23		25.26	29.46	33.80	38.53	43.36		48.63	4 / 1			
reaction time 0.172	interval		3.87	3.80	3.83	3.80		4.03	4.20	4.34	4.73	4.83	5.27			11.50	12.03	13.90
	velocity	7.59	9.04	9.21	9.14	9.21		8.68	8.33	8.06	7.40	7.25	7.59	8.23		9.13	8.73	7.55
H1 lead leg L	strides	20	13	13	13	13		13	13	13	15	15	17	158				
Warholm, Karsten (NOR) (19	time	5.86	9.66	13.40	17.20	20.93		24.93	29.13	33.44	38.20	43.13		48.76	3 / 2			
reaction time 0.166	interval		3.80	3.74	3.80	3.73		4.00	4.20	4.31	4.76	4.93	5.63			11.34	11.93	14.00
	velocity	7.68	9.21	9.36	9.21	9.38		8.75	8.33	8.12	7.35	7.10	7.10	8.20		9.26	8.80	7.50
H1 lead leg L	strides	20	13	13	13	13		13	13	13	15	15	17	158				
Hemeida, Bassem (QAT) (20	time	6.03	9.93	13.90	17.73	21.66		25.83	30.23	34.72	39.47	44.20		49.50	2 / 3			
reaction time 0.156	interval		3.90	3.97	3.83	3.93		4.17	4.40	4.49	4.75	4.73	5.30			11.70	12.50	13.97
	velocity	7.46	8.97	8.82	9.14	8.91		8.39	7.95	7.80	7.37	7.40	7.55	8.08		8.97	8.40	7.52
H1 lead leg R	strides	21	13	13	13	14		14	14	14	14	14	17	161				
Sibilio, Alessandro (ITA) (19	time	6.10	10.06	13.93	17.86	21.74		25.86	30.30	34.83	39.39	44.06		49.50	5 / 4			
reaction time 0.178	interval		3.96	3.87	3.93	3.88		4.12	4.44	4.53	4.56	4.67	5.44			11.76	12.44	13.76
	velocity	7.38	8.84	9.04	8.91	9.02		8.50	7.88	7.73	7.68	7.49	7.35	8.08		8.93	8.44	7.63
H1 lead leg R	strides	21	13	13	13	13		13	15	15	15	15	18	164				

Heat 2

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Henson (2023) - Athlete First: 2023 year end hurdle report

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997	time	5.80	9.50		16.83			24.70	28.90	33.33	38.00	42.90		48.47	4 / 1			
reaction time 0.156	interval		3.70		7.33			7.87	4.20	4.43	4.67	4.90	5.57			11.03	12.07	14.00
	velocity	7.76	9.46		9.55			8.89	8.33	7.90	7.49	7.14	7.18	8.25		9.52	8.70	7.50
H1 lead leg L	strides	21	13	13					13	14	14	14	17.2	119.2				
Mägi, Rasmus (EST) (1992)	time	6.20	10.06	13.70	17.60	21.63		25.70	29.93	34.33	38.86	43.46		48.58	7 / 2			
reaction time 0.205	interval		3.86	3.64	3.90	4.03		4.07	4.23	4.40	4.53	4.60	5.12			11.40	12.33	13.53
	velocity	7.26	9.07	9.62	8.97	8.68		8.60	8.27	7.95	7.73	7.61	7.81	8.23		9.21	8.52	7.76
H1 lead leg R	strides	21	13	13	13	13		13	13	14	14	14	17	158				
Bassitt, Trevor (USA) (1998)	time	5.97	9.73		17.23	21.13		25.23	29.47	33.90	38.60	43.43		48.73	8 / 3			
reaction time 0.164	interval		3.76		7.50	3.90		4.10	4.24	4.43	4.70	4.83	5.30			11.26	12.24	13.96
	velocity	7.54	9.31		9.33	8.97		8.54	8.25	7.90	7.45	7.25	7.55	8.21		9.33	8.58	7.52
H1 lead leg R	strides	20	13			13		13	13	13	14	14	16.2	129.2				
Mukhobe, Wiseman Were (K	time	5.93			17.63			25.83		34.63	39.23	43.83		49.10	1 / 4			
reaction time 0.199	interval				11.70			8.20		8.80	4.60	4.60	5.27			11.70		
	velocity	7.59			8.97			8.54		7.95	7.61	7.61	7.59	8.15		8.97		
H1 lead leg R	strides	20									15	15	19	69				

Heat 1

date 20-Aug-23

Henson (2023) - Athlete First: 2023 year end hurdle report

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2	time	5.93	9.77	13.47		20.93		24.93	29.16	33.53	38.03	42.86		48.12	2 / 1			
reaction time 0.167	interval		3.84	3.70		7.46		4.00	4.23	4.37	4.50	4.83	5.26					13.70
	velocity	7.59	9.11	9.46		9.38		8.75	8.27	8.01	7.78	7.25	7.60	8.31				7.66
H1 lead leg L	strides	20	13	12				12		13	13	14	16.2	113.2				
Vaillant, Ludvy (FRA) (1995)	time	5.83	9.60	13.23	16.80	20.63		24.60	28.80	33.23	37.76	42.60		48.27	3 / 2			
reaction time 0.182	interval		3.77	3.63	3.57	3.83		3.97	4.20	4.43	4.53	4.84	5.67			10.97	12.00	13.80
	velocity	7.72	9.28	9.64	9.80	9.14		8.82	8.33	7.90	7.73	7.23	7.05	8.29		9.57	8.75	7.61
H1 lead leg R	strides	21	13	13	13	13		13	14	14	14	14	17.7	159.7				
Bonvin, Julien (SUI) (1999)	time	5.96	9.73	13.46	17.13	21.13		25.40	29.73	34.23	38.97			49.19	5 / 3			
reaction time 0.188	interval		3.77	3.73	3.67	4.00		4.27	4.33	4.50	4.74		10.22			11.17	12.60	
	velocity	7.55	9.28	9.38	9.54	8.75		8.20	8.08	7.78	7.38		7.34	8.13		9.40	8.33	
H1 lead leg L	strides	21	13	13	13	13		14	14	15	15			131				
Xie Zhiyu (CHN) (2000)	time	6.16	10.13	13.96		21.86		26.06	30.46	34.93	39.53	44.23		49.40	8 / 4			
reaction time 0.207	interval		3.97	3.83		7.90		4.20	4.40	4.47	4.60	4.70	5.17					13.77
	velocity	7.31	8.82	9.14		8.86		8.33	7.95	7.83	7.61	7.45	7.74	8.10				7.63
H1 lead leg L	strides	21	13	13				13	14	14	14		17	119				

2023 Herculis Meeting International d'Athlétisme (Monaco, MON)

FINAL

date 21-Jul-23

Omega Timing (2023) - diamond league race analysis

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19	time	5.55	9.05	12.62	16.26	20.02		23.95	28.03	32.24	36.65	41.21		46.51	7 / 1			
reaction time 0.146	interval		3.50	3.57	3.64	3.76		3.93	4.08	4.21	4.41	4.56	5.30			10.71	11.77	13.18
	velocity	8.11	10.00	9.80	9.62	9.31		8.91	8.58	8.31	7.94	7.68	7.55	8.60		9.80	8.92	7.97
H1 lead leg L	strides	20	13	13	13	13		13	13	13	13	15	17.7	156.7				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

dos Santos, Alison (BRA) (2		time	5.71	9.26	12.88	16.52	20.34	24.30	28.43	32.71	37.15	41.99		47.66	6 / 2			
reaction time	0.169	interval		3.55	3.62	3.64	3.82	3.96	4.13	4.28	4.44	4.84	5.67			10.81	11.91	13.56
		velocity	7.88	9.86	9.67	9.62	9.16	8.84	8.47	8.18	7.88	7.23	7.05	8.39		9.71	8.82	7.74
H1 lead leg	L	strides	20	13	12	12	12	12	13	13	13	14	17	151				
Allen, CJ (USA) (1995)		time	5.64	9.25	12.92	16.67	20.54	24.53	28.66	32.99	37.55	42.29		47.84	5 / 3			
reaction time	0.148	interval		3.61	3.67	3.75	3.87	3.99	4.13	4.33	4.56	4.74	5.55			11.03	11.99	13.63
		velocity	7.98	9.70	9.54	9.33	9.04	8.77	8.47	8.08	7.68	7.38	7.21	8.36		9.52	8.76	7.70
H1 lead leg	L	strides	20	13	13	13			13	14	14	15		115				
Vaillant, Ludvy (FRA) (1995)		time	5.73	9.32	12.98	16.74	20.61	24.63	28.82	33.23	37.76	42.39		47.85	2 / 4			
reaction time	0.158	interval		3.59	3.66	3.76	3.87	4.02	4.19	4.41	4.53	4.63	5.46	PB		11.01	12.08	13.57
		velocity	7.85	9.75	9.56	9.31	9.04	8.71	8.35	7.94	7.73	7.56	7.33	8.36		9.54	8.69	7.74
H1 lead leg	R	strides	21	13	13	13			14	14	14	14	18	134				
Happio, Wilfried (FRA) (199		time	5.80	9.44	13.14	16.91	20.82	24.89	29.09	33.44	38.09	42.79		48.25	4 / 5			
reaction time	0.149	interval		3.64	3.70	3.77	3.91	4.07	4.20	4.35	4.65	4.70	5.46			11.11	12.18	13.70
		velocity	7.76	9.62	9.46	9.28	8.95	8.60	8.33	8.05	7.53	7.45	7.33	8.29		9.45	8.62	7.66
H1 lead leg	L	strides	20	13	13	13			13	13	15	15		115				
Smidt, Nick (NED) (1997)		time	5.83	9.53	13.26	17.07	21.03	25.16	29.40	33.80	38.34	43.04		48.57	8 / 6			
reaction time	0.167	interval		3.70	3.73	3.81	3.96	4.13	4.24	4.40	4.54	4.70	5.53			11.24	12.33	13.64
		velocity	7.72	9.46	9.38	9.19	8.84	8.47	8.25	7.95	7.71	7.45	7.23	8.24		9.34	8.52	7.70
H1 lead leg	L	strides	21	13	13	13	13	14	14	14	14	14		143				
Rosser, Khallifah (USA) (199		time	5.73	9.31	12.98	16.73	20.59	24.65	28.93	33.46	38.13	43.00		48.71	1 / 7			
reaction time	0.172	interval		3.58	3.67	3.75	3.86	4.06	4.28	4.53	4.67	4.87	5.71			11.00	12.20	14.07
		velocity	7.85	9.78	9.54	9.33	9.07	8.62	8.18	7.73	7.49	7.19	7.01	8.21		9.55	8.61	7.46
H1 lead leg	R	strides	21	13	13	13			14	14	14	14		116				
Sibilio, Alessandro (ITA) (19		time	5.76	9.43	13.21	17.00								dnf	3 / --			
reaction time	0.126	interval		3.67	3.78	3.79										11.24		
		velocity	7.81	9.54	9.26	9.23										9.34		
H1 lead leg	R	strides	21	13	13	13								60				

2023 P-T-S Meeting (Banská Bystrica, SVK) (TV Analysis

FINAL date 20-Jul-23

Henson (2023) - Athlete First: 2023 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997		time	5.78	9.32	13.00	16.78	20.66		24.66	28.80	33.10	37.58	42.12		47.26	6 / 1			
reaction time	0.210	interval		3.54	3.68	3.78	3.88		4.00	4.14	4.30	4.48	4.54	5.14			11.00	12.02	13.32
		velocity	7.79	9.89	9.51	9.26	9.02		8.75	8.45	8.14	7.81	7.71	7.78	8.46		9.55	8.74	7.88
H1 lead leg	L	strides		13	13	13	13		13	14	14	14	14	17.2	138.2				

2023 USATF National Championships (Eugene, OR) (TV Analysis)

FINAL date 09-Jul-23

Henson (2023) - Athlete First: 2023 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.81	9.44	13.14	16.92	20.75		24.70	28.69	32.76	37.00	41.47		46.62	5 / 1			
reaction time		interval		3.63	3.70	3.78	3.83		3.95	3.99	4.07	4.24	4.47	5.15			11.11	11.77	12.78
		velocity	7.75	9.64	9.46	9.26	9.14		8.86	8.77	8.60	8.25	7.83	7.77	8.58		9.45	8.92	8.22
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	17	154				
Allen, CJ (USA) (1995)		time	5.87	9.54	13.24	17.01	20.82		24.79	28.86	33.23	37.80	42.54		48.18	4 / 2			
reaction time		interval		3.67	3.70	3.77	3.81		3.97	4.07	4.37	4.57	4.74	5.64			11.14	11.85	13.68
		velocity	7.67	9.54	9.46	9.28	9.19		8.82	8.60	8.01	7.66	7.38	7.09	8.30		9.43	8.86	7.68
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17.7	156.7				
Bassitt, Trevor (USA) (1998)		time	5.94	9.64	13.38	17.18	21.15		25.25	29.49	33.80	38.30	43.01		48.26	6 / 3			
reaction time		interval		3.70	3.74	3.80	3.97		4.10	4.24	4.31	4.50	4.71	5.25			11.24	12.31	13.52
		velocity	7.58	9.46	9.36	9.21	8.82		8.54	8.25	8.12	7.78	7.43	7.62	8.29		9.34	8.53	7.77
H1 lead leg	R	strides	20	13	13	12	12		13	13	13	14	14	17	154				
Rosser, Khallifah (USA) (199		time	5.94	9.61	13.28	17.08	21.05		25.09	29.29	33.66	38.27	43.11		48.77	7 / 4			
reaction time		interval		3.67	3.67	3.80	3.97		4.04	4.20	4.37	4.61	4.84	5.66			11.14	12.21	13.82
		velocity	7.58	9.54	9.54	9.21	8.82		8.66	8.33	8.01	7.59	7.23	7.07	8.20		9.43	8.60	7.60
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	15	18	160				
McLaughlin, Taylor (USA) (1		time	5.97	9.71	13.51	17.38	21.32		25.39		34.06	38.77	43.57		49.14	1 / 5			
reaction time		interval		3.74	3.80	3.87	3.94		4.07		8.67	4.71	4.80	5.57			11.41		
		velocity	7.54	9.36	9.21	9.04	8.88		8.60		8.07	7.43	7.29	7.18	8.14		9.20		
H1 lead leg	R	strides	21	13	13	13	13		13			15	15	18	134				
Smith, James (USA) (2000)		time	6.17	10.01	13.91	17.85	21.89		26.09		34.90	39.50	44.18		49.56	3 / 6			
reaction time		interval		3.84	3.90	3.94	4.04		4.20		8.81	4.60	4.68	5.38			11.68		
		velocity	7.29	9.11	8.97	8.88	8.66		8.33		7.95	7.61	7.48	7.43	8.07		8.99		
H1 lead leg	L	strides	21	13	13	13	13					15	15		103				
Kendziera, Dave (USA) (1994		time	6.00	9.84	13.58	17.35	21.25		25.29	29.59	34.13	38.90			49.74	8 / 7			
reaction time		interval		3.84	3.74	3.77	3.90		4.04	4.30	4.54	4.77		10.84			11.35	12.24	
		velocity	7.50	9.11	9.36	9.28	8.97		8.66	8.14	7.71	7.34		6.92	8.04		9.25	8.58	

H1 lead leg	L	strides	21	14	13	13	13		14	14	15		117				
Jordan-Bacot, Quivell (USA)		time	5.94	9.67	13.61	17.58	21.65	26.06		35.16	39.97	44.84		50.73	2 / 8		
reaction time		interval		3.73	3.94	3.97	4.07	4.41		9.10	4.81	4.87	5.89			11.64	
		velocity	7.58	9.38	8.88	8.82	8.60	7.94		7.69	7.28	7.19	6.79	7.88		9.02	
H1 lead leg	L	strides	21	13	13	13	13				15	15		103			

2023 Bauhaus Galan (Stockholm, SWE)

FINAL date 02-Jul-23

Omega Timing (2023) - diamond league race analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.61	9.17	12.77	16.43	20.24		24.22	28.33	32.70	37.28	42.02		47.57	8 / 1			
reaction time	0.156	interval		3.56	3.60	3.66	3.81		3.98	4.11	4.37	4.58	4.74	5.55			10.82	11.90	13.69
		velocity	8.02	9.83	9.72	9.56	9.19		8.79	8.52	8.01	7.64	7.38	7.21	8.41		9.70	8.82	7.67
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	17.7	156.7				
McMaster, Kyron (IVB) (1997		time	5.66	9.33	13.08	16.92	20.94		25.08	29.37	33.82	38.44	43.20		48.94	7 / 2			
reaction time	0.147	interval		3.67	3.75	3.84	4.02		4.14	4.29	4.45	4.62	4.76	5.74			11.26	12.45	13.83
		velocity	7.95	9.54	9.33	9.11	8.71		8.45	8.16	7.87	7.58	7.35	6.97	8.17		9.33	8.43	7.59
H1 lead leg	L	strides	21	13		13	13		14	14	14	14	15	17.7	148.7				
Mägi, Rasmus (EST) (1992)		time	5.92	9.69	13.48	17.27	21.16		25.20	29.50	34.02	38.65	43.38		49.04	3 / 3			
reaction time	0.165	interval		3.77	3.79	3.79	3.89		4.04	4.30	4.52	4.63	4.73	5.66			11.35	12.23	13.88
		velocity	7.60	9.28	9.23	9.23	9.00		8.66	8.14	7.74	7.56	7.40	7.07	8.16		9.25	8.59	7.56
H1 lead leg	R	strides	21	13		13	13		13	14		14	15	18	134				
Sibilio, Alessandro (ITA) (19		time	5.90	9.71	13.60	17.45	21.41		25.44	29.81	34.33	38.88	43.38		49.11	5 / 4			
reaction time	0.150	interval		3.81	3.89	3.85	3.96		4.03	4.37	4.52	4.55	4.50	5.73			11.55	12.36	13.57
		velocity	7.63	9.19	9.00	9.09	8.84		8.68	8.01	7.74	7.69	7.78	6.98	8.14		9.09	8.50	7.74
H1 lead leg	R	strides	21	13		13	13		13	15		15	15	18.7	136.7				
Happio, Wilfried (FRA) (1998		time	5.79	9.44	13.12	16.88	20.80		24.86	29.12	33.68	38.71	43.77		49.67	6 / 5			
reaction time	0.151	interval		3.65	3.68	3.76	3.92		4.06	4.26	4.56	5.03	5.06	5.90			11.09	12.24	14.65
		velocity	7.77	9.59	9.51	9.31	8.93		8.62	8.22	7.68	6.96	6.92	6.78	8.05		9.47	8.58	7.17
H1 lead leg	L	strides	20	13		13	13		13	13	14	15	15		129				
Vaillant, Ludvy (FRA) (1995)		time	5.85	9.54	13.26	17.03	20.92		25.02	29.34	34.01	38.83	43.78		49.91	4 / 6			
reaction time	0.199	interval		3.69	3.72	3.77	3.89		4.10	4.32	4.67	4.82	4.95	6.13			11.18	12.31	14.44
		velocity	7.69	9.49	9.41	9.28	9.00		8.54	8.10	7.49	7.26	7.07	6.53	8.01		9.39	8.53	7.27
H1 lead leg	R	strides	21	13		13	13		13	14		14	15		116				
Edlund, Oskar (SWE) (2002)		time	5.97	9.80	13.73	17.69	21.72		25.95	30.42	35.04	39.80	44.57		50.35	1 / 7			
reaction time	0.177	interval		3.83	3.93	3.96	4.03		4.23	4.47	4.62	4.76	4.77	5.78			11.72	12.73	14.15
		velocity	7.54	9.14	8.91	8.84	8.68		8.27	7.83	7.58	7.35	7.34	6.92	7.94		8.96	8.25	7.42
H1 lead leg	L	strides	21	13		13	13		13			15	15		103				
Copello, Yasmani (TUR) (198		time	5.97	9.76	13.61	17.44	21.42		25.58	30.00	34.66	39.61	44.61		50.59	2 / 8			
reaction time	0.186	interval		3.79	3.85	3.83	3.98		4.16	4.42	4.66	4.95	5.00	5.98			11.47	12.56	14.61
		velocity	7.54	9.23	9.09	9.14	8.79		8.41	7.92	7.51	7.07	7.00	6.69	7.91		9.15	8.36	7.19
H1 lead leg	R	strides	20	13		13	13		13	14		15	15		116				

2023 Bislett Games (Oslo, NOR)

FINAL date 15-Jun-23

Omega Timing (2023) - diamond league race analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.59	9.16	12.76	16.41	20.17		24.05	28.07	32.27	36.63	41.20		46.52	7 / 1			
reaction time	0.162	interval		3.57	3.60	3.65	3.76		3.88	4.02	4.20	4.36	4.57	5.32			10.82	11.66	13.13
		velocity	8.05	9.80	9.72	9.59	9.31		9.02	8.71	8.33	8.03	7.66	7.52	8.60		9.70	9.01	8.00
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	17.7	156.7				
Allen, CJ (USA) (1995)		time	5.64	9.28	12.99	16.80	20.68		24.64	28.75	33.09	37.50	42.06		47.58	6 / 2			
reaction time	0.170	interval		3.64	3.71	3.81	3.88		3.96	4.11	4.34	4.41	4.56	5.52	PB		11.16	11.95	13.31
		velocity	7.98	9.62	9.43	9.19	9.02		8.84	8.52	8.06	7.94	7.68	7.25	8.41		9.41	8.79	7.89
H1 lead leg	L	strides	22	13	13	13	13		13	14	14	14	14	17	160				
Happio, Wilfried (FRA) (1998		time	5.82	9.47	13.16	16.95	20.88		24.93	29.11	33.48	38.00	42.70		48.13	5 / 3			
reaction time	0.159	interval		3.65	3.69	3.79	3.93		4.05	4.18	4.37	4.52	4.70	5.43			11.13	12.16	13.59
		velocity	7.73	9.59	9.49	9.23	8.91		8.64	8.37	8.01	7.74	7.45	7.37	8.31		9.43	8.63	7.73
H1 lead leg	L	strides	20			13	13		13			13	15	17	104				
Vaillant, Ludvy (FRA) (1995)		time	5.69	9.23	12.88	16.65	20.57		24.66	28.94	33.43	38.09	42.89		48.59	2 / 4			
reaction time	0.155	interval		3.54	3.65	3.77	3.92		4.09	4.28	4.49	4.66	4.80	5.70			10.96	12.29	13.95
		velocity	7.91	9.89	9.59	9.28	8.93		8.56	8.18	7.80	7.51	7.29	7.02	8.23		9.58	8.54	7.53
H1 lead leg	R	strides	21			13	13		13			14	14	17.7	105.7				
Bassitt, Trevor (USA) (1998)		time	5.72	9.40	13.20	17.04	21.00		25.07	29.27	33.60	38.31	43.05		48.63	4 / 5			
reaction time	0.185	interval		3.68	3.80	3.84	3.96		4.07	4.20	4.33	4.71	4.74	5.58			11.32	12.23	13.78
		velocity	7.87	9.51	9.21	9.11	8.84		8.60	8.33	8.08	7.43	7.38	7.17	8.23		9.28	8.59	7.62
H1 lead leg	R	strides	20			13	13		13			14	13		86				
Rosser, Khallifah (USA) (199		time	5.71	9.31	12.97	16.74	20.67		24.79	29.09	33.54	38.25	43.09		48.87	3 / 6			

reaction time	0.172	interval		3.60	3.66	3.77	3.93	4.12	4.30	4.45	4.71	4.84	5.78			11.03	12.35	14.00
		velocity	7.88	9.72	9.56	9.28	8.91	8.50	8.14	7.87	7.43	7.23	6.92	8.18		9.52	8.50	7.50
H1 lead leg	R	strides	21			13	13	13			15	15		90				
Lahoulou, Abdelmalik (ALG)		time	5.94	9.59	13.26	17.04	20.97	25.07	29.40	33.90	38.57	43.47		49.27	8 / 7			
reaction time	0.178	interval		3.65	3.67	3.78	3.93	4.10	4.33	4.50	4.67	4.90	5.80			11.10	12.36	14.07
		velocity	7.58	9.59	9.54	9.26	8.91	8.54	8.08	7.78	7.49	7.14	6.90	8.12		9.46	8.50	7.46
H1 lead leg	L	strides	22	13	13	13	13	14			15			103				
Watrin, Julien (BEL) (1992)		time	5.80	9.44	13.24	17.10	21.04	25.21	29.58	34.10	38.87	43.71		49.45	1 / 8			
reaction time	0.209	interval		3.64	3.80	3.86	3.94	4.17	4.37	4.52	4.77	4.84	5.74			11.30	12.48	14.13
		velocity	7.76	9.62	9.21	9.07	8.88	8.39	8.01	7.74	7.34	7.23	6.97	8.09		9.29	8.41	7.43
H1 lead leg	R	strides	20			13	13	15			14	15		90				

2023 NCAA Championships (Austin, TX) (TV Analysis)

FINAL date 09-Jun-23

Henson (2023) - Athlete First: 2023 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Robinson, Chris (USA) (200		time	5.89	9.53	13.25	17.20	21.20		25.36	29.66	34.06	38.42	42.89		48.12	6 / 1			
reaction time		interval		3.64	3.72	3.95	4.00		4.16	4.30	4.40	4.36	4.47	5.23	PB		11.31	12.46	13.23
		velocity	7.64	9.62	9.41	8.86	8.75		8.41	8.14	7.95	8.03	7.83	7.65	8.31		9.28	8.43	7.94
H1 lead leg	R	strides	21	13	13	14	14		14	14	15	15	15	18.2	166.2				
Long, Corde (USA) (2002)		time	5.99	9.71	13.56	17.46	21.54		25.76	30.28	34.62	39.09	43.49		48.53	5 / 2			
reaction time		interval		3.72	3.85	3.90	4.08		4.22	4.52	4.34	4.47	4.40	5.04	PB		11.47	12.82	13.21
		velocity	7.51	9.41	9.09	8.97	8.58		8.29	7.74	8.06	7.83	7.95	7.94	8.24		9.15	8.19	7.95
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	13	16.7	157.7				
Nathaniel, Ezekiel (NGR) (20		time	5.99	9.69	13.50	17.33	21.30		25.39	29.66	34.06	38.66	43.39		48.54	8 / 3			
reaction time		interval		3.70	3.81	3.83	3.97		4.09	4.27	4.40	4.60	4.73	5.15			11.34	12.33	13.73
		velocity	7.51	9.46	9.19	9.14	8.82		8.56	8.20	7.95	7.61	7.40	7.77	8.24		9.26	8.52	7.65
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	14	17.7	157.7				
Dean, Caleb (USA) (2001)		time	5.76	9.47	13.28	17.17	21.17		25.39	29.80	34.30	38.80	43.26		48.56	7 / 4			
reaction time		interval		3.71	3.81	3.89	4.00		4.22	4.41	4.50	4.50	4.46	5.30			11.41	12.63	13.46
		velocity	7.81	9.43	9.19	9.00	8.75		8.29	7.94	7.78	7.78	7.85	7.55	8.24		9.20	8.31	7.80
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	14	18.2	161.2				
Griffith, Rasheeme (BAR) (2		time	6.05	9.74	13.60	17.52	21.54			30.06	34.48	39.09	43.91		49.17	3 / 5			
reaction time		interval		3.69	3.86	3.92	4.02			8.52	4.42	4.61	4.82	5.26			11.47	12.54	13.85
		velocity	7.44	9.49	9.07	8.93	8.71			8.22	7.92	7.59	7.26	7.60	8.14		9.15	8.37	7.58
H1 lead leg	L	strides	21	13	13	13	13		13		14	14	15	18	147				
Cavanaugh, Caleb (USA) (20		time	5.85	9.50	13.30	17.18	21.17		25.39	29.86	34.47	39.10	43.84		49.20	9 / 6			
reaction time		interval		3.65	3.80	3.88	3.99		4.22	4.47	4.61	4.63	4.74	5.36			11.33	12.68	13.98
		velocity	7.69	9.59	9.21	9.02	8.77		8.29	7.83	7.59	7.56	7.38	7.46	8.13		9.27	8.28	7.51
H1 lead leg	R	strides	20	13	13	13	13		13	15	15	15	15	17.7	162.7				
Elliott, Cass (USA) (2000)		time	6.14	9.89	13.80	17.76	21.89			30.43	34.88	39.39	44.01		49.21	2 / 7			
reaction time		interval		3.75	3.91	3.96	4.13			8.54	4.45	4.51	4.62	5.20			11.62	12.67	13.58
		velocity	7.33	9.33	8.95	8.84	8.47			8.20	7.87	7.76	7.58	7.69	8.13		9.04	8.29	7.73
H1 lead leg	L	strides	21	14	14	14	14				15	15	16	18.5	141.5				
Smith, James (USA) (2000)		time	5.99	9.76	13.60	17.48	21.50		25.74	30.03	34.47	39.00	43.76		49.21	4 / 8			
reaction time		interval		3.77	3.84	3.88	4.02		4.24	4.29	4.44	4.53	4.76	5.45	PB		11.49	12.55	13.73
		velocity	7.51	9.28	9.11	9.02	8.71		8.25	8.16	7.88	7.73	7.35	7.34	8.13		9.14	8.37	7.65
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18.2	164.2				
Saddler, Craig (USA)		time	5.96	9.54	13.38	17.31	21.40			30.25	34.85	39.46	44.27		49.70	1 / 9			
reaction time		interval		3.58	3.84	3.93	4.09			8.85	4.60	4.61	4.81	5.43			11.35	12.94	14.02
		velocity	7.55	9.78	9.11	8.91	8.56			7.91	7.61	7.59	7.28	7.37	8.05		9.25	8.11	7.49
H1 lead leg	R	strides	21	13	13	13	13				15	15	15	17	135				

2023 Meeting de Paris (Paris, FRA)

FINAL date 09-Jun-23

Omega Timing (2023) - diamond league race analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Allen, CJ (USA) (1995)		time	5.72	9.43	13.27	17.20	21.14		25.08	29.10	33.34	37.78	42.36		47.92	7 / 1			
reaction time	0.138	interval		3.71	3.84	3.93	3.94		3.94	4.02	4.24	4.44	4.58	5.56			11.48	11.90	13.26
		velocity	7.87	9.43	9.11	8.91	8.88		8.88	8.71	8.25	7.88	7.64	7.19	8.35		9.15	8.82	7.92
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	14	17	157				
Happio, Wilfried (FRA) (1998		time	5.76	9.37	13.06	16.85	20.77		24.79	28.96	33.32	38.00	42.81		48.26	6 / 2			
reaction time	0.156	interval		3.61	3.69	3.79	3.92		4.02	4.17	4.36	4.68	4.81	5.45			11.09	12.11	13.85
		velocity	7.81	9.70	9.49	9.23	8.93		8.71	8.39	8.03	7.48	7.28	7.34	8.29		9.47	8.67	7.58
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Bassitt, Trevor (USA) (1998)		time	5.69	9.35	13.18	17.09	21.13		25.19	29.34	33.69	38.22	42.87		48.28	4 / 3			
reaction time	0.164	interval		3.66	3.83	3.91	4.04		4.06	4.15	4.35	4.53	4.65	5.41			11.40	12.25	13.53
		velocity	7.91	9.56	9.14	8.95	8.66		8.62	8.43	8.05	7.73	7.53	7.39	8.29		9.21	8.57	7.76
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	14	17	155				

Vaillant, Ludvy (FRA) (1995)		time	5.74	9.33	12.98	16.76	20.61	24.56	28.70	33.19	37.88	42.72		48.60	2 / 4			
reaction time	0.153	interval		3.59	3.65	3.78	3.85	3.95	4.14	4.49	4.69	4.84	5.88			11.02	11.94	14.02
		velocity	7.84	9.75	9.59	9.26	9.09	8.86	8.45	7.80	7.46	7.23	6.80	8.23		9.53	8.79	7.49
H1 lead leg	R	strides	21	13	13	13	13	13	14	14	14	14	18	160				
McMaster, Kyron (IVB) (1997		time	5.70	9.31	13.03	16.79	20.66	24.70	28.90	33.35	38.00	42.81		48.65	8 / 5			
reaction time	0.157	interval		3.61	3.72	3.76	3.87	4.04	4.20	4.45	4.65	4.81	5.84			11.09	12.11	13.91
		velocity	7.89	9.70	9.41	9.31	9.04	8.66	8.33	7.87	7.53	7.28	6.85	8.22		9.47	8.67	7.55
H1 lead leg	L	strides	21	13	13	13	13	13	13	14	15	15	17.5	160.5				
Rosser, Khallifah (USA) (199		time	5.74	9.36	13.06	16.85	20.80	24.88	29.09	33.61	38.26	43.09		48.96	3 / 6			
reaction time	0.143	interval		3.62	3.70	3.79	3.95	4.08	4.21	4.52	4.65	4.83	5.87			11.11	12.24	14.00
		velocity	7.84	9.67	9.46	9.23	8.86	8.58	8.31	7.74	7.53	7.25	6.81	8.17		9.45	8.58	7.50
H1 lead leg	R	strides	21	13	13	13	13	13	13	14	14	15	18	160				

2023 FBK Games (Hengelo, NED)

FINAL date 04-Jun-23

Omega Timing (2023) - continental tour race analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Allen, CJ (USA) (1995)		time	5.75	9.46	13.29	17.17	21.12		25.14	29.27	33.59	38.10	42.73		48.24	6 / 1			
reaction time	0.166	interval		3.71	3.83	3.88	3.95		4.02	4.13	4.32	4.51	4.63	5.51			11.42	12.10	13.46
		velocity	7.83	9.43	9.14	9.02	8.86		8.71	8.47	8.10	7.76	7.56	7.26	8.29		9.19	8.68	7.80
H1 lead leg	L	strides	21	13	13	13	13		13	13	14	14	14	17	158				
Smidt, Nick (NED) (1997)		time	5.83	9.55	13.35	17.17	21.08		25.11	29.38	33.82	38.49	43.40		49.17	5 / 2			
reaction time	0.186	interval		3.72	3.80	3.82	3.91		4.03	4.27	4.44	4.67	4.91	5.77			11.34	12.21	14.02
		velocity	7.72	9.41	9.21	9.16	8.95		8.68	8.20	7.88	7.49	7.13	6.93	8.14		9.26	8.60	7.49
H1 lead leg	L	strides	21	13					13	14	14	14	15	18	122				
Abuaku, Joshua (GER) (199		time	5.83	9.51	13.27	17.07	21.02		25.23	29.62	34.17	38.87	43.70		49.23	8 / 3			
reaction time	0.207	interval		3.68	3.76	3.80	3.95		4.21	4.39	4.55	4.70	4.83	5.53			11.24	12.55	14.08
		velocity	7.72	9.51	9.31	9.21	8.86		8.31	7.97	7.69	7.45	7.25	7.23	8.13		9.34	8.37	7.46
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15	18	161				
Happio, Wilfried (FRA) (199		time	5.85	9.55	13.34	17.23	21.27		25.40	29.68	34.18	38.98	43.79		49.40	7 / 4			
reaction time	0.158	interval		3.70	3.79	3.89	4.04		4.13	4.28	4.50	4.80	4.81	5.61			11.38	12.45	14.11
		velocity	7.69	9.46	9.23	9.00	8.66		8.47	8.18	7.78	7.29	7.28	7.13	8.10		9.23	8.43	7.44
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.5	158.5				
Barr, Thomas (IRL) (1992)		time	5.95	9.76	13.60	17.50	21.50		25.73	30.15	34.76	39.45	44.11		49.52	2 / 5			
reaction time	0.167	interval		3.81	3.84	3.90	4.00		4.23	4.42	4.61	4.69	4.66	5.41			11.55	12.65	13.96
		velocity	7.56	9.19	9.11	8.97	8.75		8.27	7.92	7.59	7.46	7.51	7.39	8.08		9.09	8.30	7.52
H1 lead leg	L	strides	20	13								14	14	17.7	78.7				
Ibañez Guevara, Pablo Andre		time	5.99	9.94	13.93	17.94	21.97		26.21	30.61	35.05	39.63	44.22		49.63	3 / 6			
reaction time	0.156	interval		3.95	3.99	4.01	4.03		4.24	4.40	4.44	4.58	4.59	5.41			11.95	12.67	13.61
		velocity	7.51	8.86	8.77	8.73	8.68		8.25	7.95	7.88	7.64	7.63	7.39	8.06		8.79	8.29	7.71
H1 lead leg	L	strides	21	14								15	15	18.2	83.2				
Watrin, Julien (BEL) (1992)		time	5.94	9.66	13.50	17.37	21.40		25.58	30.04	34.64	39.41	44.28		49.92	4 / 7			
reaction time	0.242	interval		3.72	3.84	3.87	4.03		4.18	4.46	4.60	4.77	4.87	5.64			11.43	12.67	14.24
		velocity	7.58	9.41	9.11	9.04	8.68		8.37	7.85	7.61	7.34	7.19	7.09	8.01		9.19	8.29	7.37
H1 lead leg	R	strides	20	13								14	15	18	80				
Lahoulou, Abdelmalik (ALG)		time	5.98	9.68	13.48	17.34	21.27		25.42	29.90	34.54	39.40	44.28		49.96	1 / 8			
reaction time	0.173	interval		3.70	3.80	3.86	3.93		4.15	4.48	4.64	4.86	4.88	5.68			11.36	12.56	14.38
		velocity	7.53	9.46	9.21	9.07	8.91		8.43	7.81	7.54	7.20	7.17	7.04	8.01		9.24	8.36	7.30
H1 lead leg	L	strides	22	13								15	15	18	83				

2023 Doha Diamond League (Doha, QAT)

FINAL date 05-May-23

Omega Timing (2023) - diamond league race analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.63	9.27	12.97	16.86	20.80		24.81	28.99	33.29	37.80	42.42		47.78	6 / 1			
reaction time	0.169	interval		3.64	3.70	3.89	3.94		4.01	4.18	4.30	4.51	4.62	5.36			11.23	12.13	13.43
		velocity	7.99	9.62	9.46	9.00	8.88		8.73	8.37	8.14	7.76	7.58	7.46	8.37		9.35	8.66	7.82
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	17	154				
Allen, CJ (USA) (1995)		time	5.66	9.29	13.06	16.93	20.89		24.94	29.12	33.47	37.96	42.49		47.93	3 / 2			
reaction time	0.144	interval		3.63	3.77	3.87	3.96		4.05	4.18	4.35	4.49	4.53	5.44	PB		11.27	12.19	13.37
		velocity	7.95	9.64	9.28	9.04	8.84		8.64	8.37	8.05	7.80	7.73	7.35	8.35		9.32	8.61	7.85
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	14	17	157				
Happio, Wilfried (FRA) (199		time	5.85	9.55	13.30	17.17	21.14		25.24	29.53	33.96	38.65	43.56		49.12	5 / 3			
reaction time	0.156	interval		3.70	3.75	3.87	3.97		4.10	4.29	4.43	4.69	4.91	5.56			11.32	12.36	14.03
		velocity	7.69	9.46	9.33	9.04	8.82		8.54	8.16	7.90	7.46	7.13	7.19	8.14		9.28	8.50	7.48
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Rosser, Khallifah (USA) (199		time	5.84	9.50	13.29	17.14	21.14		25.32	29.69	34.20	38.85	43.66		49.25	4 / 4			
reaction time	0.161	interval		3.66	3.79	3.85	4.00		4.18	4.37	4.51	4.65	4.81	5.59			11.30	12.55	13.97

		velocity	7.71	9.56	9.23	9.09	8.75	8.37	8.01	7.76	7.53	7.28	7.16	8.12		9.29	8.37	7.52
H1 lead leg	R	strides	21	13	13	13	13	13	14	14	14	14	17.5	159.5				
Bassitt, Trevor (USA) (1998)		time	5.89	9.67	13.54	17.50	21.57	25.77	30.13	34.61	39.32	43.99		49.52	7 / 5			
reaction time	0.158	interval		3.78	3.87	3.96	4.07	4.20	4.36	4.48	4.71	4.67	5.53			11.61	12.63	13.86
		velocity	7.64	9.26	9.04	8.84	8.60	8.33	8.03	7.81	7.43	7.49	7.23	8.08		9.04	8.31	7.58
H1 lead leg	R	strides	20	13	13	13	13	13	13	13	13	14	20	158				
Zazini, Sokwakhana (RSA) (2		time	5.83	9.46	13.25	17.13	21.12	25.58	30.07	34.69	39.36	44.01		49.74	1 / 6			
reaction time	0.170	interval		3.63	3.79	3.88	3.99	4.46	4.49	4.62	4.67	4.65	5.73			11.30	12.94	13.94
		velocity	7.72	9.64	9.23	9.02	8.77	7.85	7.80	7.58	7.49	7.53	6.98	8.04		9.29	8.11	7.53
H1 lead leg	L	strides	23	14	14	14	14	15			16	16		126				
Barr, Thomas (IRL) (1992)		time	5.95	9.79	13.71	17.77	21.92	26.26	30.76	35.30	39.89	44.53		49.88	8 / 7			
reaction time	0.159	interval		3.84	3.92	4.06	4.15	4.34	4.50	4.54	4.59	4.64	5.35			11.82	12.99	13.77
		velocity	7.56	9.11	8.93	8.62	8.43	8.06	7.78	7.71	7.63	7.54	7.48	8.02		8.88	8.08	7.63
H1 lead leg	L	strides	20	13	13	13	13	13	14		14	14		127				
Nezir, Ismail (TUR) (2003)		time	6.16	10.10	14.19	18.37	22.62	27.08	31.79	36.37	41.13	45.91		51.40	2 / 8			
reaction time	0.195	interval		3.94	4.09	4.18	4.25	4.46	4.71	4.58	4.76	4.78	5.49			12.21	13.42	14.12
		velocity	7.31	8.88	8.56	8.37	8.24	7.85	7.43	7.64	7.35	7.32	7.29	7.78		8.60	7.82	7.44
H1 lead leg	L	strides	20	13	13	13	13	13		14	14	14		127				

2022 Weltklasse (Zürich, SUI) (TV Analysis)

FINAL date 08-Sep-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.70	9.27	12.91	16.58	20.45	21.96	24.36	28.50	32.70	37.10	41.67		46.98	6 / 1			
reaction time	0.155	interval		3.57	3.64	3.67	3.87		3.91	4.14	4.20	4.40	4.57	5.31			10.88	11.92	13.17
		velocity	7.89	9.80	9.62	9.54	9.04	9.11	8.95	8.45	8.33	7.95	7.66	7.53	8.51		9.65	8.81	7.97
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	13	13	16	149				
Rosser, Khallifah (USA) (199		time	5.74	9.27			20.69	22.22	24.66	28.73	32.93	37.47	42.17		47.76	5 / 2			
reaction time	0.169	interval		3.53			11.42		3.97	4.07	4.20	4.54	4.70	5.59					13.44
		velocity	7.84	9.92			9.19	9.00	8.82	8.60	8.33	7.71	7.45	7.16	8.38				7.81
H1 lead leg	R	strides	21	13					13	13	13	14	14	18	119				
Allen, CJ (USA) (1995)		time	5.74	9.41		17.05	20.92	22.43	24.89	28.96	33.30	37.80	42.64		48.21	3 / 3			
reaction time	0.159	interval		3.67		7.64	3.87		3.97	4.07	4.34	4.50	4.84	5.57			11.31	11.91	13.68
		velocity	7.84	9.54		9.16	9.04	8.92	8.82	8.60	8.06	7.78	7.23	7.18	8.30		9.28	8.82	7.68
H1 lead leg	L	strides	20	13			13		13	13	14	14	15	17.5	132.5				
Happio, Wilfried (FRA) (199		time	5.87	9.54	13.38	17.32	21.32	22.89	25.46	29.69	34.00	38.71	43.48		48.72	7 / 4			
reaction time	0.130	interval		3.67	3.84	3.94	4.00		4.14	4.23	4.31	4.71	4.77	5.24			11.45	12.37	13.79
		velocity	7.67	9.54	9.11	8.88	8.75	8.74	8.45	8.27	8.12	7.43	7.34	7.63	8.21		9.17	8.49	7.61
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.5	158.5				
Watrin, Julien (BEL) (1992)		time	5.77	9.41		17.15	21.15	22.77	25.29	29.50	33.90	38.60	43.44		49.08	8 / 5			
reaction time	0.183	interval		3.64		7.74	4.00		4.14	4.21	4.40	4.70	4.84	5.64			11.38	12.35	13.94
		velocity	7.80	9.62		9.04	8.75	8.78	8.45	8.31	7.95	7.45	7.23	7.09	8.15		9.23	8.50	7.53
H1 lead leg	R	strides	20	13			13		13	13	14	15	15	17.7	133.7				
Copello, Yasmani (TUR) (198		time	5.90	9.54		17.28	21.29	22.88	25.42	29.86	34.29	38.94	43.61		49.10	4 / 6			
reaction time	0.172	interval		3.64		7.74	4.01		4.13	4.44	4.43	4.65	4.67	5.49			11.38	12.58	13.75
		velocity	7.63	9.62		9.04	8.73	8.74	8.47	7.88	7.90	7.53	7.49	7.29	8.15		9.23	8.35	7.64
H1 lead leg	R	strides	20	13			13		13	14	14	14	14	17.5	132.5				
Bonvin, Julien (SUI) (1999)		time	5.77	9.34		16.95	20.89	22.46	24.99	29.43	34.04	38.80	43.84		49.63	2 / 7			
reaction time	0.154	interval		3.57		7.61	3.94		4.10	4.44	4.61	4.76	5.04	5.79			11.18	12.48	14.41
		velocity	7.80	9.80		9.20	8.88	8.90	8.54	7.88	7.59	7.35	6.94	6.91	8.06		9.39	8.41	7.29
H1 lead leg	L	strides	20	13			13		13	14	14	15	15	18.2	135.2				

2022 ISTAF (Berlin, GER) (TV Analysis)

FINAL date 04-Sep-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.76	9.28	12.88	16.60	20.36		24.32	28.48	32.76	37.24	41.96		47.24	7 / 1			
reaction time	0.139	interval		3.52	3.60	3.72	3.76		3.96	4.16	4.28	4.48	4.72	5.28			10.84	11.88	13.48
		velocity	7.81	9.94	9.72	9.41	9.31		8.84	8.41	8.18	7.81	7.42	7.58	8.47		9.69	8.84	7.79
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
Vaillant, Ludvy (FRA) (1995)		time	5.88				21.04		25.08	29.40	33.84	38.40	43.04		48.26	6 / 2			
reaction time	0.120	interval					15.16		4.04	4.32	4.44	4.56	4.64	5.22	**PB**				13.64
		velocity	7.65				9.23		8.66	8.10	7.88	7.68	7.54	7.66	8.29				7.70
H1 lead leg	R	strides	21						13	14	14	14	14	17	107				
Abuaku, Joshua (GER) (1996		time	5.96				20.92		25.04	29.44	33.92	38.52	43.24		48.55	5 / 3			
reaction time	0.174	interval					14.96		4.12	4.40	4.48	4.60	4.72	5.31	**PB**				13.80
		velocity	7.55				9.36		8.50	7.95	7.81	7.61	7.42	7.53	8.24				7.61
H1 lead leg	R	strides	20						13	14	14	15	15	18	109				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

2022 Memorial van Damme (Brussels, BEL) (TV Analysis)

FINAL date 02-Sep-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.80	9.41	13.11	16.88	20.79	22.45	24.79	29.03	33.40	37.87	42.34		47.54	6 / 1			
reaction time	0.210	interval		3.61	3.70	3.77	3.91		2.34	4.24	4.37	4.47	4.47	5.20			11.08	12.15	13.31
		velocity	7.76	9.70	9.46	9.28	8.95	8.91	14.96	8.25	8.01	7.83	7.83	7.69	8.41		9.48	8.64	7.89
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	13	13	16	149				
Rosser, Khallifah (USA) (199		time	5.87	9.51	13.21		20.89	22.60	24.96	29.09	33.43	37.97	42.57		47.88	4 / 2			
reaction time	0.232	interval		3.64	3.70		7.68		2.36	4.13	4.34	4.54	4.60	5.31					13.48
		velocity	7.67	9.62	9.46		9.11	8.85	14.83	8.47	8.06	7.71	7.61	7.53	8.35				7.79
H1 lead leg	R	strides	21	13	13				13	13	14	14	14	17.7	132.7				
Allen, CJ (USA) (1995)		time	5.80	9.47	13.28		21.12	22.77	25.19	29.29	33.56	38.04	42.61		47.96	2 / ~~3~~			
reaction time	0.178	interval		3.67	3.81		7.84		2.42	4.10	4.27	4.48	4.57	5.35	DQ				13.32
		velocity	7.76	9.54	9.19		8.93	8.78	14.46	8.54	8.20	7.81	7.66	7.48	8.34				7.88
H1 lead leg	L	strides	20	13	13				13	13	13	14	14	17	130				
Happio, Wilfried (FRA) (199		time	5.87	9.51	13.24		21.08	22.72	25.16	29.46	33.97	38.67	43.44		48.61	5 / ~~4~~ 3			
reaction time	0.170	interval		3.64	3.73		7.84		2.44	4.30	4.51	4.70	4.77	5.17					13.98
		velocity	7.67	9.62	9.38		8.93	8.80	14.34	8.14	7.76	7.45	7.34	7.74	8.23				7.51
H1 lead leg	L	strides	20	13	13				13	13	13	15	15	17.2	132.2				
Watrin, Julien (BEL) (1992)		time	5.84	9.47	13.21	17.02	20.89	22.59	24.89	29.16	33.56	38.20	43.07		48.66	7 / ~~5~~ 4			
reaction time	0.224	interval		3.63	3.74	3.81	3.87		2.30	4.27	4.40	4.64	4.87	5.59	NR PB		11.18	12.14	13.91
		velocity	7.71	9.64	9.36	9.19	9.04	8.85	15.22	8.20	7.95	7.54	7.19	7.16	8.22		9.39	8.65	7.55
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	15	18	161				
Preis, Constantin (GER) (11		time	6.04	9.74	13.48	17.32	21.29	22.98	25.42	29.69	34.20	38.77	43.44		48.83	8 / ~~6~~ 5			
reaction time	0.253	interval		3.70	3.74	3.84	3.97		2.44	4.27	4.51	4.57	4.67	5.39			11.28	12.37	13.75
		velocity	7.45	9.46	9.36	9.11	8.82	8.70	14.34	8.20	7.76	7.66	7.49	7.42	8.19		9.31	8.49	7.64
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15		153				
Copello, Yasmani (TUR) (19		time	5.90	9.64	13.38		21.22	22.93	25.29	29.66	34.13	38.70	43.37		48.83	3 / ~~7~~ 6			
reaction time	0.190	interval		3.74	3.74		7.84		2.36	4.37	4.47	4.57	4.67	5.46					13.71
		velocity	7.63	9.36	9.36		8.93	8.72	14.83	8.01	7.83	7.66	7.49	7.33	8.19				7.66
H1 lead leg	R	strides	20	13	13				13	14	14	14	14	17.2	132.2				
Nezir, Ismail (TUR) (2003)		time	6.14	10.04	13.98		22.19	23.88	26.36	30.59	35.20	39.87	44.58		49.92	1 / ~~8~~ 7			
reaction time	0.170	interval		3.90	3.94		8.21		2.48	4.23	4.61	4.67	4.71	5.34					13.99
		velocity	7.33	8.97	8.88		8.53	8.38	14.11	8.27	7.59	7.49	7.43	7.49	8.01				7.51
H1 lead leg	L	strides	20	13	13				13	13	14	14	14		114				

2022 NACAC Championships (Freeport, BAH) (TV Analysis)

FINAL date 21-Aug-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997		time	5.60	9.23	13.03	16.87	20.77		24.80	28.86	33.06	37.43			47.34	6 / 1			
reaction time		interval		3.63	3.80	3.84	3.90		4.03	4.06	4.20	4.37			CR		11.27	11.99	
		velocity	8.04	9.64	9.21	9.11	8.97		8.68	8.62	8.33	8.01			8.45		9.32	8.76	
H1 lead leg	L	strides		13	13	13	13		13	13	13	14			105				
Rosser, Khallifah (USA) (199		time	5.73	9.46	13.26	17.03	20.96		25.00	29.00	33.16	37.53			47.59	4 / 2			
reaction time		interval		3.73	3.80	3.77	3.93		4.04	4.00	4.16	4.37			PB		11.30	11.97	
		velocity	7.85	9.38	9.21	9.28	8.91		8.66	8.75	8.41	8.01			8.41		9.29	8.77	
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14			126				
Allen, CJ (USA) (1995)		time	5.73	9.50	13.36	17.20	21.16		25.23	29.33	33.60	38.00			48.23	3 / 3			
reaction time		interval		3.77	3.86	3.84	3.96		4.07	4.10	4.27	4.40					11.47	12.13	
		velocity	7.85	9.28	9.07	9.11	8.84		8.60	8.54	8.20	7.95			8.29		9.15	8.66	
H1 lead leg	L	strides		13	13	13	13		13		14	14			93				

2022 European Athletics Championships (Munich, GER) (TV Analysis)

FINAL date 19-Aug-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.77	9.27	13.03	16.72	20.57	22.14	24.59	28.68	32.93	37.30	41.99		47.12	4 / 1			
reaction time	0.215	interval		3.50	3.76	3.69	3.85		4.02	4.09	4.25	4.37	4.69	5.13	CR		10.95	11.96	13.31
		velocity	7.80	10.00	9.31	9.49	9.09	9.03	8.71	8.56	8.24	8.01	7.46	7.80	8.49		9.59	8.78	7.89
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	17.2	156.2				
Happio, Wilfried (FRA) (199		time	5.85	9.43		17.09	21.06	22.67	25.19	29.44	33.85	38.50	43.27		48.56	3 / 2			
reaction time	0.185	interval		3.58		7.66	3.97		4.13	4.25	4.41	4.65	4.77	5.29			11.24	12.35	13.83
		velocity	7.69	9.78		9.14	8.82	8.82	8.47	8.24	7.94	7.53	7.34	7.56	8.24		9.34	8.50	7.59
H1 lead leg	L	strides	20	13			13		13	13	13	15	15	18	133				
Copello, Yasmani (TUR) (19		time	5.97	9.71	13.63	17.45	21.50	23.11	25.63	29.96	34.37	38.86	43.44		48.78	6 / 3			
reaction time	0.240	interval		3.74	3.92	3.82	4.05		4.13	4.33	4.41	4.49	4.58	5.34			11.48	12.51	13.48
		velocity	7.54	9.36	8.93	9.16	8.64	8.65	8.47	8.08	7.94	7.80	7.64	7.49	8.20		9.15	8.39	7.79
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17.2	158.2				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Vaillant, Ludvy (FRA) (1995)		time	5.93	9.66	13.60	17.45	21.38	22.99	25.55	29.84	34.25	38.82	43.52		48.79	5 / 4			
reaction time	0.193	interval		3.73	3.94	3.85	3.93		4.17	4.29	4.41	4.57	4.70	5.27			11.52	12.39	13.68
		velocity	7.59	9.38	8.88	9.09	8.91	8.70	8.39	8.16	7.94	7.66	7.45	7.59	8.20		9.11	8.47	7.68
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	14	17	159				
Abuaku, Joshua (GER) (1996		time	5.85	9.54		17.08	20.98	22.62	25.11	29.52	33.97	38.58	43.36		48.79	7 / 5			
reaction time	0.168	interval		3.69		7.54	3.90		4.13	4.41	4.45	4.61	4.78	5.43	**PB**		11.23	12.44	13.84
		velocity	7.69	9.49		9.28	8.97	8.84	8.47	7.94	7.87	7.59	7.32	7.37	8.20		9.35	8.44	7.59
H1 lead leg	L	strides	20	13			13		13	14	14	15	15	18	135				
Watrin, Julien (BEL) (1992)		time	6.02	9.62		17.13	21.02	22.63	25.11	29.44	33.89	38.50	43.36		48.98	2 / 6			
reaction time	0.173	interval		3.60		7.51	3.89		4.09	4.33	4.45	4.61	4.86	5.62			11.11	12.31	13.92
		velocity	7.48	9.72		9.32	9.00	8.84	8.56	8.08	7.87	7.59	7.20	7.12	8.17		9.45	8.53	7.54
H1 lead leg	R	strides	21	13			13		13	14	14	14	15	18	135				
Bonvin, Julien (SUI) (1999)		time	5.77	9.38		17.05	21.10	22.74	25.43	29.88	34.57	39.47	44.52		50.24	1 / 7			
reaction time	0.216	interval		3.61		7.67	4.05		4.33	4.45	4.69	4.90	5.05	5.72			11.28	12.83	14.64
		velocity	7.80	9.70		9.13	8.64	8.80	8.08	7.87	7.46	7.14	6.93	6.99	7.96		9.31	8.18	7.17
H1 lead leg	L	strides	21	13			13		14	14	15	15	15	18	138				
Coroller, Victor (FRA) (1997)		time	5.93	9.79		17.49	21.58	23.21	25.79	30.28	34.82	39.71	44.76		50.46	8 / 8			
reaction time	0.201	interval		3.86		7.70	4.09		4.21	4.49	4.54	4.89	5.05	5.70			11.56	12.79	14.48
		velocity	7.59	9.07		9.09	8.56	8.62	8.31	7.80	7.71	7.16	6.93	7.02	7.93		9.08	8.21	7.25
H1 lead leg	R	strides	21	14			14		14	15	16	16	16	19	145				

2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL) (TV Analysis)

FINAL date 06-Aug-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.83	9.50	13.26	17.10	21.03	22.69	25.17	29.50	33.90	38.23	42.63		47.80	6 / 1			
reaction time	0.179	interval		3.67	3.76	3.84	3.93		4.14	4.33	4.40	4.33	4.40	5.17			11.27	12.40	13.13
		velocity	7.72	9.54	9.31	9.11	8.91	8.81	8.45	8.08	7.95	8.08	7.95	7.74	8.37		9.32	8.47	8.00
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	13	13	16	149				
Rosser, Khallifah (USA) (199		time	5.87	9.53	13.33	17.17	21.16	22.84		29.36	33.73	38.23	42.86		48.30	4 / 2			
reaction time	0.177	interval		3.66	3.80	3.84	3.99			8.20	4.37	4.50	4.63	5.44			11.30	12.19	13.50
		velocity	7.67	9.56	9.21	9.11	8.77	8.76		8.54	8.01	7.78	7.56	7.35	8.28		9.29	8.61	7.78
H1 lead leg	R	strides	21	13	13		13				14	14	14	18	120				
Happio, Wilfried (FRA) (1998		time	5.83	9.50	13.26	17.10	21.10	22.80	25.23	29.50	33.93	38.70	43.50		48.74	5 / 3			
reaction time	0.154	interval		3.67	3.76	3.84	4.00		4.13	4.27	4.43	4.77	4.80	5.24			11.27	12.40	14.00
		velocity	7.72	9.54	9.31	9.11	8.75	8.77	8.47	8.20	7.90	7.34	7.29	7.63	8.21		9.32	8.47	7.50
H1 lead leg	L	strides	20	13	13		13		13	13	13	15	15	17.7	145.7				
Lattin, Amere (USA) (1997)		time	5.77	9.43	13.16	17.07	21.03	22.71			34.10	38.73	43.43		48.79	2 / 4			
reaction time	0.147	interval		3.66	3.73	3.91	3.96				13.07	4.63	4.70	5.36			11.30		
		velocity	7.80	9.56	9.38	8.95	8.84	8.81			8.03	7.56	7.45	7.46	8.20		9.29		
H1 lead leg	L	strides	20	13	13		13					14	14	17	104				
Watrin, Julien (BEL) (1992)		time	5.86	9.56	13.30	17.10	21.06	22.73			33.93	38.50	43.23		48.91	3 / 5			
reaction time	0.225	interval		3.70	3.74	3.80	3.96				12.87	4.57	4.73	5.68			11.24		
		velocity	7.68	9.46	9.36	9.21	8.84	8.80			8.16	7.66	7.40	7.04	8.18		9.34		
H1 lead leg	R	strides	21	13	13		13					14	15	18	107				
Allen, CJ (USA) (1995)		time	5.86	9.56	13.50	17.46	21.53	23.21	25.66	29.93	34.30	38.83	43.53		49.01	7 / 6			
reaction time	0.152	interval		3.70	3.94	3.96	4.07		4.13	4.27	4.37	4.53	4.70	5.48			11.60	12.47	13.60
		velocity	7.68	9.46	8.88	8.84	8.60	8.62	8.47	8.20	8.01	7.73	7.45	7.30	8.16		9.05	8.42	7.72
H1 lead leg	L	strides	20	13	13	13	13		13	14	14		15	18	146				
Smidt, Nick (NED) (1997)		time	5.93	9.70	13.53	17.53	21.56	23.28	25.73	30.03		38.90	43.56		49.07	9 / 7			
reaction time	0.154	interval		3.77	3.83	4.00	4.03		4.17	4.30		8.87	4.66	5.51	**PB**		11.60	12.50	13.53
		velocity	7.59	9.28	9.14	8.75	8.68	8.59	8.39	8.14		7.89	7.51	7.26	8.15		9.05	8.40	7.76
H1 lead leg	L	strides	20	13	13		13		14	14			14		101				
Urbaniak, Sebastian (POL) (2		time	5.96	9.83	13.70	17.73	21.73	23.48	25.96	30.36		39.53			49.85	8 / 8			
reaction time	0.160	interval		3.87	3.87	4.03	4.00		4.23	4.40		9.17					11.77	12.63	
		velocity	7.55	9.04	9.04	8.68	8.75	8.52	8.27	7.95		7.63			8.02		8.92	8.31	
H1 lead leg	L	strides	21	14	14	14	14		14	14					105				
Angela, Ramsey (NED) (1999		time	6.03	9.73	13.70	17.73	21.90	29.90				40.03			50.98	1 / 9			
reaction time	0.188	interval		3.70	3.97	4.03	4.17					18.13					11.70		
		velocity	7.46	9.46	8.82	8.68	8.39	6.69				7.72			7.85		8.97		
H1 lead leg	R	strides	22	15	15		14								66				

2022 Japanese National High School Championships (Naruto, JPN)

FINAL date 05-Aug-22

Kishima (2022) - national high school championships biomechanics data collection

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Konno, Ryoma (JPN) (2004)		time	6.07	9.93	13.85	17.95	22.13		26.42	30.82	35.25	39.67	44.67		50.46	4 / 1			
reaction time	0.161	interval		3.86	3.92	4.10	4.18		4.29	4.40	4.43	4.42	5.00	5.79			11.88	12.87	13.85
		velocity	7.41	9.07	8.93	8.54	8.37		8.16	7.95	7.90	7.92	7.00	6.91	7.93		8.84	8.16	7.58

H1 lead leg	R	strides	21	15	15	15	15	15	15	15	15	15	19	175				
Hirata, Ai (JPN) (2004)		time	6.15	10.03	14.05	18.08	22.27	26.57	30.98	35.53	40.25	45.20		51.01	5 / 2			
reaction time	0.185	interval		3.88	4.02	4.03	4.19	4.30	4.41	4.55	4.72	4.95	5.81	PB		11.93	12.90	14.22
		velocity	7.32	9.02	8.71	8.68	8.35	8.14	7.94	7.69	7.42	7.07	6.88	7.84		8.80	8.14	7.38
H1 lead leg	R	strides	22	15	15	15	15	15	15	15	15	15	20	177				
Fuchiqami, Syota (JPN) (200		time	6.08	9.98	13.93	18.10	22.42	26.88	31.38	36.02	40.73	45.53		51.03	6 / 3			
reaction time	0.186	interval		3.90	3.95	4.17	4.32	4.46	4.50	4.64	4.71	4.80	5.50			12.02	13.28	14.15
		velocity	7.40	8.97	8.86	8.39	8.10	7.85	7.78	7.54	7.43	7.29	7.27	7.84		8.74	7.91	7.42
H1 lead leg	R	strides	22	14	14	14	14	15	15	15	15	15	19.5	172.5				
Yamada, Nao (JPN) (2004)		time	6.18	10.18	14.28	18.40	22.62	26.90	31.33	35.95	40.90	45.85		51.48	3 / 4			
reaction time	0.184	interval		4.00	4.10	4.12	4.22	4.28	4.43	4.62	4.95	4.95	5.63	PB		12.22	12.93	14.52
		velocity	7.28	8.75	8.54	8.50	8.29	8.18	7.90	7.58	7.07	7.07	7.10	7.77		8.59	8.12	7.23
H1 lead leg	L	strides	23	15	15	15	15	15	15	15	17	17	20	182				
Muto, Yuhi (JPN) (2004)		time	6.47	10.43	14.48	18.67	23.03	27.52	32.05	36.63	41.62	46.57		52.14	8 / 5			
reaction time	0.199	interval		3.96	4.05	4.19	4.36	4.49	4.53	4.58	4.99	4.95	5.57			12.20	13.38	14.52
		velocity	6.96	8.84	8.64	8.35	8.03	7.80	7.73	7.64	7.01	7.07	7.18	7.67		8.61	7.85	7.23
H1 lead leg	R	strides	22	15	15	15	15	15	15	15	15	17		159				
Maruyama, Tomoyo (JPN) (2		time	6.17	10.22	14.27	18.52	22.95	27.48	32.02	36.77	41.65	46.73		52.86	7 / 6			
reaction time	0.187	interval		4.05	4.05	4.25	4.43	4.53	4.54	4.75	4.88	5.08	6.13			12.35	13.50	14.71
		velocity	7.29	8.64	8.64	8.24	7.90	7.73	7.71	7.37	7.17	6.89	6.53	7.57		8.50	7.78	7.14
H1 lead leg	R	strides	22	15	15	15	15	15	15	15	17	17		161				
Shimura, Takeshi (JPN) (200		time	6.17	10.12	14.40	18.80	23.33	28.10	32.93	37.88	42.85	47.88		53.35	2 / 7			
reaction time	0.138	interval		3.95	4.28	4.40	4.53	4.77	4.83	4.95	4.97	5.03	5.47			12.63	14.13	14.95
		velocity	7.29	8.86	8.18	7.95	7.73	7.34	7.25	7.07	7.04	6.96	7.31	7.50		8.31	7.43	7.02
H1 lead leg	R	strides	22	15	15	15	15	15	15	15	15	15		157				
Imanishi, Ryota (JPN) (2004)		time	6.27	10.18	14.08	18.27	22.67	27.15	31.73	36.55	41.65	47.10		54.00	9 / 8			
reaction time	0.181	interval		3.91	3.90	4.19	4.40	4.48	4.58	4.82	5.10	5.45	6.90			12.00	13.46	15.37
		velocity	7.18	8.95	8.97	8.35	7.95	7.81	7.64	7.26	6.86	6.42	5.80	7.41		8.75	7.80	6.83
H1 lead leg	L	strides	22	14	14	15	15	15	15	15	15	16		156				

2022 World Athletics Championships (Eugene, OR)

FINAL date 19-Jul-22

Wamani (2023) - race analysis of men's and women's 400m hurdles in the 2022 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.71	9.26	12.81	16.38	20.12	21.67	24.01	28.11	32.33	36.69	41.07		46.29	6 / 1			
reaction time	0.141	interval		3.55	3.55	3.57	3.74		3.89	4.10	4.22	4.36	4.38	5.22	CR NR		10.67	11.73	12.96
		velocity	7.88	9.86	9.86	9.80	9.36	9.23	9.00	8.54	8.29	8.03	7.99	7.66	8.64		9.84	8.95	8.10
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	13	13	16.2	149.2				
Benjamin, Rai (USA) (1997)		time	5.76	9.33	13.03	16.75	20.45	21.97	24.32	28.38	32.60	36.94	41.47		46.89	3 / 2			
reaction time	0.157	interval		3.57	3.70	3.72	3.70		3.87	4.06	4.22	4.34	4.53	5.42			10.99	11.63	13.09
		velocity	7.81	9.80	9.46	9.41	9.46	9.10	9.04	8.62	8.29	8.06	7.73	7.38	8.53		9.55	9.03	8.02
H1 lead leg	R	strides	20	13	13	13	12		12	13	13	13	13	16.5	151.5				
Bassitt, Trevor (USA) (1998)		time	5.86	9.54	13.21	16.90	20.69	22.28	24.72	28.98	33.30	37.77	42.33		47.39	8 / 3			
reaction time	0.147	interval		3.68	3.67	3.69	3.79		4.03	4.26	4.32	4.47	4.56	5.06	PB		11.04	12.08	13.35
		velocity	7.68	9.51	9.54	9.49	9.23	8.98	8.68	8.22	8.10	7.83	7.68	7.91	8.44		9.51	8.69	7.87
H1 lead leg	R	strides	20	13	13	12	12		13	13	13	13	13	16.2	151.2				
Happio, Wilfried (FRA) (1998		time	5.79	9.33	12.95	16.58	20.34	21.86	24.26	28.50	32.83	37.49	42.18		47.41	5 / 4			
reaction time	0.134	interval		3.54	3.62	3.63	3.76		3.92	4.24	4.33	4.66	4.69	5.23	PB		10.79	11.92	13.68
		velocity	7.77	9.89	9.67	9.64	9.31	9.15	8.93	8.25	8.08	7.51	7.46	7.65	8.44		9.73	8.81	7.68
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Rosser, Khallifah (USA) (199		time	5.89	9.59	13.38	17.15	21.02	22.60	24.99	29.16	33.48	38.00	42.59		47.88	1 / 5			
reaction time	0.176	interval		3.70	3.79	3.77	3.87		3.97	4.17	4.32	4.52	4.59	5.29				12.01	13.43
		velocity	7.64	9.46	9.23	9.28	9.04	8.85	8.82	8.39	8.10	7.74	7.63	7.56	8.35			8.74	7.82
H1 lead leg		strides		13	13	13	13		13	13	14	14	14	17.5	137.5				
Hyde, Jaheel (JAM) (1997)		time	5.71	9.26	12.86	16.52	20.25	21.86	24.27	28.40	32.83	37.47	42.33		48.03	7 / 6			
reaction time	0.149	interval		3.55	3.60	3.66	3.73		4.02	4.13	4.43	4.64	4.86	5.70	PB		10.81	11.88	13.93
		velocity	7.88	9.86	9.72	9.56	9.38	9.15	8.71	8.47	7.90	7.54	7.20	7.02	8.33		9.71	8.84	7.54
H1 lead leg	L	strides	22	13	13	13	13		14	14	15	15	15	18.2	165.2				
Warholm, Karsten (NOR) (19		time	5.71	9.19	12.71	16.32	19.99	21.50	23.81	27.96	32.48	37.35	42.38		48.42	4 / 7			
reaction time	0.140	interval		3.48	3.52	3.61	3.67		3.82	4.15	4.52	4.87	5.03	6.04			10.61	11.64	14.42
		velocity	7.88	10.06	9.94	9.70	9.54	9.30	9.16	8.43	7.74	7.19	6.96	6.62	8.26		9.90	9.02	7.28
H1 lead leg	L	strides	20	13	13	13	13		13	13	15	15	15	18.5	161.5				
Mägi, Rasmus (EST) (1992)		time	5.99	9.71	13.50	17.27	21.12	22.71	25.14	29.45	33.87	38.52	43.28		48.92	2 / 8			
reaction time	0.140	interval		3.72	3.79	3.77	3.85		4.02	4.31	4.42	4.65	4.76	5.64			11.28	12.18	13.83
		velocity	7.51	9.41	9.23	9.28	9.09	8.81	8.71	8.12	7.92	7.53	7.35	7.09	8.18		9.31	8.62	7.59
H1 lead leg	R	strides		13	13	13	13		13	13	14	14	15	18	139				

Wamani (2023) - race analysis of men's and women's 400m hurdles in the 2022 season

Semi-Final 3

date 17-Jul-22

Henson (2022) - Athlete First: 2022 year end hurdle report (TV Analysis)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.63	9.10	12.86	16.40	20.20	21.83	24.13	28.30	32.66	37.40	42.20		48.00	5 / 1		*Henson (2022)*	
reaction time	0.169	interval		3.47	3.76	3.54	3.80		3.93	4.17	4.36	4.74	4.80	5.80			10.77	11.90	13.90
		velocity	7.99	10.09	9.31	9.89	9.21	9.16	8.91	8.39	8.03	7.38	7.29	6.90	8.33		9.75	8.82	7.55
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.7	158.7				
Happio, Wilfried (FRA) (1998		time	5.76	9.40	13.20	16.90	20.76	22.44	24.80	29.06	33.46	38.07	42.73		48.14	6 / 2		*Henson (2022)*	
reaction time	0.136	interval		3.64	3.80	3.70	3.86		4.04	4.26	4.40	4.61	4.66	5.41	**PB**		11.14	12.16	13.67
		velocity	7.81	9.62	9.21	9.46	9.07	8.91	8.66	8.22	7.95	7.59	7.51	7.39	8.31		9.43	8.63	7.68
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Rosser, Khallifah (USA) (199		time	5.73	9.36	13.17	16.87	20.70	22.41		28.93	33.47	38.00	42.73		48.34	3 / 3		*Henson (2022)*	
reaction time	0.141	interval		3.63	3.81	3.70	3.83			8.23	4.54	4.53	4.73	5.61			11.14	12.06	13.80
		velocity	7.85	9.64	9.19	9.46	9.14	8.92		8.51	7.71	7.73	7.40	7.13	8.27		9.43	8.71	7.61
H1 lead leg	R	strides	21	13	13	13	13				14	14	14	18	133				
Mowatt, Kemar (JAM) (1995)		time	5.76	9.33	13.17	16.86	20.77	22.53		29.20	33.73	38.40	43.10		48.59	4 / 4		*Henson (2022)*	
reaction time	0.143	interval		3.57	3.84	3.69	3.91			8.43	4.53	4.67	4.70	5.49			11.10	12.34	13.90
		velocity	7.81	9.80	9.11	9.49	8.95	8.88		8.30	7.73	7.49	7.45	7.29	8.23		9.46	8.51	7.55
H1 lead leg	L	strides	21	13	13	13	13				15	15	15	18	136				
Smidt, Nick (NED) (1997)		time	5.86	9.57	13.50	17.30	21.40	23.25	25.70	30.00	34.47	39.13	43.93		49.56	8 / 5		*Henson (2022)*	
reaction time	0.145	interval		3.71	3.93	3.80	4.10		4.30	4.30	4.47	4.66	4.80	5.63			11.44	12.70	13.93
		velocity	7.68	9.43	8.91	9.21	8.54	8.60	8.14	8.14	7.83	7.51	7.29	7.10	8.07		9.18	8.27	7.54
H1 lead leg	L	strides	20	13	13	13	14		14	14	14	14	15	18	162				
Kurokawa, Kazuki (JPN) (200		time	5.81	9.49	13.35	17.18	21.14	22.76	25.33	29.68	34.25	39.02	43.93		49.69	1 / 6		*Wamani (2023)*	
reaction time	0.136	interval		3.68	3.86	3.83	3.96		4.19	4.35	4.57	4.77	4.91	5.76			11.37	12.50	14.25
		velocity	7.75	9.51	9.07	9.14	8.84	8.79	8.35	8.05	7.66	7.34	7.13	6.94	8.05		9.23	8.40	7.37
H1 lead leg	L	strides		13	13	13	13		14	14	15	15	15	18	143				
Zazini, Sokwakhana (RSA) (2		time	5.87	9.66	13.56	17.30	21.26	23.04		29.90	34.57	39.50	44.37		50.22	2 / 7		*Henson (2022)*	
reaction time	0.153	interval		3.79	3.90	3.74	3.96			8.64	4.67	4.93	4.87	5.85			11.43	12.60	14.47
		velocity	7.67	9.23	8.97	9.36	8.84	8.68		8.10	7.49	7.10	7.19	6.84	7.96		9.19	8.33	7.26
H1 lead leg	L	strides	23	15	15	15	15				16	17	17	20.2	153.2				
Nathaniel, Ezekiel (NGR) (20		time	5.97	10.33	14.36	18.40	22.60	24.53		31.80	36.77				54.18	7 / 8		*Henson (2022)*	
reaction time	0.176	interval		4.36	4.03	4.04	4.20			9.20	4.97						12.43	13.40	
		velocity	7.54	8.03	8.68	8.66	8.33	8.15		7.61	7.04				7.38		8.45	7.84	
H1 lead leg	R	strides	21	15	14	13	13			14	14				104				

Semi-Final 2 (TV A

date 17-Jul-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.73	9.43	13.14	16.86	20.76	22.49	24.86	29.16	33.53	38.03	42.56		47.85	5 / 1			
reaction time	0.166	interval		3.70	3.71	3.72	3.90		4.10	4.30	4.37	4.50	4.53	5.29			11.13	12.30	13.40
		velocity	7.85	9.46	9.43	9.41	8.97	8.89	8.54	8.14	8.01	7.78	7.73	7.56	8.36		9.43	8.54	7.84
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	13	13	16	149				
Bassitt, Trevor (USA) (1998)		time	5.83	9.63	13.37	17.13	21.10	22.80	25.17	29.43	33.83	38.30	42.83		48.17	7 / 2			
reaction time	0.144	interval		3.80	3.74	3.76	3.97		4.07	4.26	4.40	4.47	4.53	5.34			11.30	12.30	13.40
		velocity	7.72	9.21	9.36	9.31	8.82	8.77	8.60	8.22	7.95	7.83	7.73	7.49	8.30		9.29	8.54	7.84
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Mägi, Rasmus (EST) (1992)		time	5.93	9.70	13.53	17.33	21.27	23.00	25.33	29.67	33.97	38.46	43.07		48.40	4 / 3			
reaction time	0.137	interval		3.77	3.83	3.80	3.94		4.06	4.34	4.30	4.49	4.61	5.33			11.40	12.34	13.40
		velocity	7.59	9.28	9.14	9.21	8.88	8.70	8.62	8.06	8.14	7.80	7.59	7.50	8.26		9.21	8.51	7.84
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14	17.5	158.5				
Bergtström, Carl (SWE) (200		time	5.83	9.67	13.63	17.63	21.68	23.48	25.93	30.23	34.63	39.10	43.70		48.75	8 / 4			
reaction time	0.161	interval		3.84	3.96	4.00	4.05		4.25	4.30	4.40	4.47	4.60	5.05			11.80	12.60	13.47
		velocity	7.72	9.11	8.84	8.75	8.64	8.52	8.24	8.14	7.95	7.83	7.61	7.92	8.21		8.90	8.33	7.80
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	18.2	171.2				
Lahoulou, Abdelmalik (ALG)		time	6.03	9.67	13.43	17.16	21.07	22.79	25.17	29.53	33.97	38.63	43.47		48.90	3 / 5			
reaction time	0.157	interval		3.64	3.76	3.73	3.91		4.10	4.36	4.44	4.66	4.84	5.43			11.13	12.37	13.94
		velocity	7.46	9.62	9.31	9.38	8.95	8.78	8.54	8.03	7.88	7.51	7.23	7.37	8.18		9.43	8.49	7.53
H1 lead leg	L	strides	22	13	13	13	13		13	14	14	15	15	17.2	162.2				
Naadokila, Moitalel Mpoke (K		time		9.90	14.03	18.07	22.27	24.10	26.53	30.93	35.43	39.90	44.37		49.34	1 / 6			
reaction time	0.149	interval			4.13	4.04	4.20		4.26	4.40	4.50	4.47	4.47	4.97				12.86	13.44
		velocity		8.08	8.47	8.66	8.33	8.30	8.22	7.95	7.78	7.83	7.83	8.05	8.11			8.16	7.81
H1 lead leg		strides			14	14	14		14	14	14	14	14	17	129				
Drummond, Gerald (CRC) (1		time	5.90	9.70	13.66	17.63	21.83	23.64	26.23	30.67	35.10	39.67	44.30		49.37	6 / 7			
reaction time	0.188	interval		3.80	3.96	3.97	4.20		4.40	4.44	4.43	4.57	4.63	5.07			11.73	13.04	13.63
		velocity	7.63	9.21	8.84	8.82	8.33	8.46	7.95	7.88	7.90	7.66	7.56	7.89	8.10		8.95	8.05	7.70
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	18	171				

Rowe, Shawn (JAM) (1992)		time	5.86	9.57	13.47	17.30	21.33	23.08	25.50	30.03	34.53	39.33	44.13		49.80	2 / 8		
reaction time	0.158	interval		3.71	3.90	3.83	4.03		4.17	4.53	4.50	4.80	4.80	5.67			11.44	12.73	14.10
		velocity	7.68	9.43	8.97	9.14	8.68	8.67	8.39	7.73	7.78	7.29	7.29	7.05	8.03		9.18	8.25	7.45
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	17	158				

Semi-Final 1 (TV A

date 17-Jul-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.73	9.40	13.35	17.33	21.47	23.22	25.56	29.73	33.97	38.33	42.87		48.44	6 / 1			
reaction time	0.181	interval		3.67	3.95	3.98	4.14		4.09	4.17	4.24	4.36	4.54	5.57			11.60	12.40	13.14
		velocity	7.85	9.54	8.86	8.79	8.45	8.61	8.56	8.39	8.25	8.03	7.71	7.18	8.26		9.05	8.47	7.99
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Hyde, Jaheel (JAM) (1997)		time	5.77	9.46	13.33	17.27	21.33	23.13	25.53	29.80	34.30	38.90	43.60		49.09	8 / 2			
reaction time	0.149	interval		3.69	3.87	3.94	4.06		4.20	4.27	4.50	4.60	4.70	5.49			11.50	12.53	13.80
		velocity	7.80	9.49	9.04	8.88	8.62	8.65	8.33	8.20	7.78	7.61	7.45	7.29	8.15		9.13	8.38	7.61
H1 lead leg	L	strides	22	13	13	13	13		14	14	14	14	15	18	163				
Watrin, Julien (BEL) (1992)		time	5.87	9.57	13.40	17.26	21.20	23.08	25.33	29.53	34.00	38.73	43.60		49.52	3 / 3			
reaction time	0.186	interval		3.70	3.83	3.86	3.94		4.13	4.20	4.47	4.73	4.87	5.92			11.39	12.27	14.07
		velocity	7.67	9.46	9.14	9.07	8.88	8.67	8.47	8.33	7.83	7.40	7.19	6.76	8.08		9.22	8.56	7.46
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.7	164.7				
Angela, Ramsey (NED) (1999		time	5.90	9.70	13.57	17.56	21.67	23.51	25.90	30.17	34.67	39.40	44.23		49.77	4 / 4			
reaction time	0.155	interval		3.80	3.87	3.99	4.11		4.23	4.27	4.50	4.73	4.83	5.54			11.66	12.61	14.06
		velocity	7.63	9.21	9.04	8.77	8.52	8.51	8.27	8.20	7.78	7.40	7.25	7.22	8.04		9.01	8.33	7.47
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	15	18.2	171.2				
Barr, Thomas (IRL) (1992)		time	5.96	9.77	13.62	17.57	21.67	23.53	25.93	30.30	34.80	39.57	44.40		50.08	5 / 3			
reaction time	0.157	interval		3.81	3.85	3.95	4.10		4.26	4.37	4.50	4.77	4.83	5.68			11.61	12.73	14.10
		velocity	7.55	9.19	9.09	8.86	8.54	8.50	8.22	8.01	7.78	7.34	7.25	7.04	7.99		9.04	8.25	7.45
H1 lead leg	L	strides	20	13	13	13	13		14	14	14	15	15	18	162				
Chalmers, Alastair (GBR) (2(		time	5.77	9.57	13.60	17.60	21.87	23.76	26.20	30.67	35.20	40.07	44.90		50.54	1 / 6			
reaction time	0.157	interval		3.80	4.03	4.00	4.27		4.33	4.47	4.53	4.87	4.83	5.64			11.83	13.07	14.23
		velocity	7.80	9.21	8.68	8.75	8.20	8.42	8.08	7.83	7.73	7.19	7.25	7.09	7.91		8.88	8.03	7.38
H1 lead leg	L	strides	20	13	13	13	13		14	14	15	15	15	18	163				
Copello, Yasmani (TUR) (19		time	5.93	9.80	13.80	17.77	22.00	23.97	26.40	30.97	35.56	40.48	45.46		51.49	2 / 7			
reaction time	0.166	interval		3.87	4.00	3.97	4.23		4.40	4.57	4.59	4.92	4.98	6.03			11.84	13.20	14.49
		velocity	7.59	9.04	8.75	8.82	8.27	8.34	7.95	7.66	7.63	7.11	7.03	6.63	7.77		8.87	7.95	7.25
H1 lead leg	L	strides	20	13	13	13	13		14	14	14	15	14	18	161				

Heat 5 (TV Analysis

date 16-Jul-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5		H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Rosser, Khallifah (USA) (199		time	5.84	9.63	13.46	17.27	21.26	22.98	25.33	29.52	33.86	38.40	43.03		48.62	2 / 1			
reaction time	0.168	interval		3.79	3.83	3.81	3.99		4.07	4.19	4.34	4.54	4.63	5.59			11.43	12.25	13.51
		velocity	7.71	9.23	9.14	9.19	8.77	8.70	8.60	8.35	8.06	7.71	7.56	7.16	8.23		9.19	8.57	7.77
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	14	14	17.2	156.2				
Angela, Ramsey (NED) (1999		time	6.17	10.13	14.13	18.16	22.33	24.10		30.77	35.17	39.70	44.26		49.62	3 / 2			
reaction time	0.182	interval		3.96	4.00	4.03	4.17			8.44	4.40	4.53	4.56	5.36			11.99	12.61	13.49
		velocity	7.29	8.84	8.75	8.68	8.39	8.30		8.29	7.95	7.73	7.68	7.46	8.06		8.76	8.33	7.78
H1 lead leg	R	strides	22	14	14	14	14				15	15	15	18	141				
Bergtström, Carl (SWE) (200		time	5.93	9.73	13.77	17.83	21.93	23.68		30.46	34.86	39.56	44.26		49.64	8 / 3			
reaction time	0.169	interval		3.80	4.04	4.06	4.10			8.53	4.40	4.70	4.70	5.38			11.90	12.63	13.80
		velocity	7.59	9.21	8.66	8.62	8.54	8.45		8.21	7.95	7.45	7.45	7.43	8.06		8.82	8.31	7.61
H1 lead leg	L	strides	22	14	14	14	14				15	15	15	18	141				
McMaster, Kyron (IVB) (1997		time	5.73	9.43	13.33	17.23	21.33	23.07	25.53	29.97	34.60	39.40	44.36		49.98	4 / 4			
reaction time	0.157	interval		3.70	3.90	3.90	4.10		4.20	4.44	4.63	4.80	4.96	5.62			11.50	12.74	14.39
		velocity	7.85	9.46	8.97	8.97	8.54	8.67	8.33	7.88	7.56	7.29	7.06	7.12	8.00		9.13	8.24	7.30
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	15	17	160				

Heat 4 (TV Analysis

date 16-Jul-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mägi, Rasmus (EST) (1992)		time	6.13	10.00	13.87	17.73	21.67	23.23	25.73	29.96	34.33	38.87	43.46		48.78	5 / 1			
reaction time	0.169	interval		3.87	3.87	3.86	3.94		4.06	4.23	4.37	4.54	4.59	5.32			11.60	12.23	13.50
		velocity	7.34	9.04	9.04	9.07	8.88	8.61	8.62	8.27	8.01	7.71	7.63	7.52	8.20		9.05	8.59	7.78
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14	17	158				
Barr, Thomas (IRL) (1992)		time	6.23	10.16	14.10	17.96	21.96	23.65	26.17	30.53	34.93	39.46	44.06		49.15	8 / 2			
reaction time	0.160	interval		3.93	3.94	3.86	4.00		4.21	4.36	4.40	4.53	4.60	5.09			11.73	12.57	13.53
		velocity	7.22	8.91	8.88	9.07	8.75	8.46	8.31	8.03	7.95	7.73	7.61	7.86	8.14		8.95	8.35	7.76
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	17.7	158.7				
Drummond, Gerald (CRC) (1		time	6.07	9.95	13.90	17.90	22.13	23.84		30.77		39.70	44.27		49.16	2 / 3			
reaction time	0.195	interval		3.88	3.95	4.00	4.23			8.64		8.93	4.57	4.89	NR		11.83	12.87	13.50

		velocity	7.41	9.02	8.86	8.75	8.27	8.39		8.10		7.84	7.66	8.18	8.14			8.88	8.16	7.78
H1 lead leg	L	strides	22	14	14	14	14					15	15	17.5	125.5					
Bassitt, Trevor (USA) (1998)		time	6.03	9.93	13.86	17.76	21.80	23.45		30.16	34.66	39.26	43.90		49.17	3 / 4				
reaction time	0.146	interval		3.90	3.93	3.90	4.04			8.36	4.50	4.60	4.64	5.27				11.73	12.40	13.74
		velocity	7.46	8.97	8.91	8.97	8.66	8.53		8.37	7.78	7.61	7.54	7.59	8.14			8.95	8.47	7.64
H1 lead leg	R	strides	20	13	13	13	13				13	13	13	16	127					

Heat 3 (TV Analysis

date 16-Jul-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.66	9.27	13.03	16.90	20.86	22.47	24.90	29.20	33.63	38.46	43.46		49.34	3 / 1			
reaction time	0.164	interval		3.61	3.76	3.87	3.96		4.04	4.30	4.43	4.83	5.00	5.88			11.24	12.30	14.26
		velocity	7.95	9.70	9.31	9.04	8.84	8.90	8.66	8.14	7.90	7.25	7.00	6.80	8.11		9.34	8.54	7.36
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.5	158.5				
Watrin, Julien (BEL) (1992)		time	5.97	9.76	13.60	17.50	21.46	23.27	25.70	30.07	34.57	39.23	44.16		49.83	5 / 2			
reaction time	0.199	interval		3.79	3.84	3.90	3.96		4.24	4.37	4.50	4.66	4.93	5.67			11.53	12.57	14.09
		velocity	7.54	9.23	9.11	8.97	8.84	8.59	8.25	8.01	7.78	7.51	7.10	7.05	8.03		9.11	8.35	7.45
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18	164				
Hyde, Jaheel (JAM) (1997)		time	5.80	9.63	13.63	17.63	21.70	23.51	26.03	30.26	34.80	39.53	44.37		50.03	6 / 3			
reaction time	0.187	interval		3.83	4.00	4.00	4.07		4.33	4.23	4.54	4.73	4.84	5.66			11.83	12.63	14.11
		velocity	7.76	9.14	8.75	8.75	8.60	8.51	8.08	8.27	7.71	7.40	7.23	7.07	8.00		8.88	8.31	7.44
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Naadokila, Moitalel Mpoke (K		time	6.03	10.00	14.03	18.10	22.16	24.03	26.50	30.90	35.46	40.20	44.83		50.19	8 / 4			
reaction time	0.177	interval		3.97	4.03	4.07	4.06		4.34	4.40	4.56	4.74	4.63	5.36			12.07	12.80	13.93
		velocity	7.46	8.82	8.68	8.60	8.62	8.32	8.06	7.95	7.68	7.38	7.56	7.46	7.97		8.70	8.20	7.54
H1 lead leg	L	strides	21	14	14	14	14		14	14	14	14	14	17	164				

Wamani (2023) - race analysis of men's and women's 400m hurdles in the 2022 season

Heat 2

date 16-Jul-22

Henson (2022) - Athlete First: 2022 year end hurdle report (TV Analysis)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.70	9.37	13.13	16.93	20.96	22.65	25.07	29.50	34.10	38.93	43.90		49.41	5 / 1		*Henson (2022)*	
reaction time	0.157	interval		3.67	3.76	3.80	4.03		4.11	4.43	4.60	4.83	4.97	5.51			11.23	12.57	14.40
		velocity	7.89	9.54	9.31	9.21	8.68	8.83	8.52	7.90	7.61	7.25	7.04	7.26	8.10		9.35	8.35	7.29
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	14	14	16	151				
Mowatt, Kemar (JAM) (1995)		time	5.90	9.67	13.53	17.53	21.67	23.51	25.97	30.37	34.93	39.53	44.17		49.44	7 / 2		*Henson (2022)*	
reaction time	0.146	interval		3.77	3.86	4.00	4.14		4.30	4.40	4.56	4.60	4.64	5.27			11.63	12.84	13.80
		velocity	7.63	9.28	9.07	8.75	8.45	8.51	8.14	7.95	7.68	7.61	7.54	7.59	8.09		9.03	8.18	7.61
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	14	15	17.2	161.2				
Happio, Wilfried (FRA) (199		time	5.96	9.60	13.40	17.27	21.30	23.05	25.40	29.73	34.20	39.07	44.07		49.60	6 / 3		*Henson (2022)*	
reaction time	0.308	interval		3.64	3.80	3.87	4.03		4.10	4.33	4.47	4.87	5.00	5.53			11.31	12.46	14.34
		velocity	7.55	9.62	9.21	9.04	8.68	8.68	8.54	8.08	7.83	7.19	7.00	7.23	8.06		9.28	8.43	7.32
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.2	158.2				
Smidt, Nick (NED) (1997)		time	5.93	9.73	13.70	17.77	21.93	23.78	26.13	30.50	35.00	39.60	44.33		49.80	8 / 4		*Henson (2022)*	
reaction time	0.180	interval		3.80	3.97	4.07	4.16		4.20	4.37	4.50	4.60	4.73	5.47			11.84	12.73	13.83
		velocity	7.59	9.21	8.82	8.60	8.41	8.41	8.33	8.01	7.78	7.61	7.40	7.31	8.03		8.87	8.25	7.59
H1 lead leg	L	strides	20	13	13	13	13		14	14	14	14	14	17.7	159.7				
Kishimoto, Takayuki (JPN) (		time	5.99	9.81	13.75	17.82	22.06	23.76	26.39	30.83	35.47	40.17	45.03		50.66	2 / 6		*Wamani (2023)*	
reaction time	0.117	interval		3.82	3.94	4.07	4.24		4.33	4.44	4.64	4.70	4.86	5.63			11.83	13.01	14.20
		velocity	7.51	9.16	8.88	8.60	8.25	8.42	8.08	7.88	7.54	7.45	7.20	7.10	7.90		8.88	8.07	7.39
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				

Wamani (2023) - race analysis of men's and women's 400m hurdles in the 2022 season

Heat 1

date 16-Jul-22

Henson (2022) - Athlete First: 2022 year end hurdle report (TV Analysis)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	6.00	9.77	13.66	17.60	21.67	23.39	25.77	29.87	34.17	38.63	43.33		49.06	4 / 1		*Henson (2022)*	
reaction time	0.156	interval		3.77	3.89	3.94	4.07		4.10	4.10	4.30	4.46	4.70	5.73			11.60	12.27	13.46
		velocity	7.50	9.28	9.00	8.88	8.60	8.55	8.54	8.54	8.14	7.85	7.45	6.98	8.15		9.05	8.56	7.80
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16.5	153.5				
Lahoulou, Abdelmalik (ALG)		time	6.10	9.86	13.70	17.66	21.76	23.44		30.16	34.67	39.43	44.26		49.58	6 / 2		*Henson (2022)*	
reaction time	0.171	interval		3.76	3.84	3.96	4.10			8.40	4.51	4.76	4.83	5.32			11.56	12.50	14.10
		velocity	7.38	9.31	9.11	8.84	8.54	8.53		8.33	7.76	7.35	7.25	7.52	8.07		9.08	8.40	7.45
H1 lead leg	L	strides	22	13	13	13	13				14		15	17	120				
Nathaniel, Ezekiel (NGR) (20		time	5.90	9.63	13.43	17.40	21.63	23.44		30.40	34.87	39.46	44.20		49.64	1 / 3		*Henson (2022)*	
reaction time	0.135	interval		3.73	3.80	3.97	4.23			8.77	4.47	4.59	4.74	5.44			11.50	13.00	13.80
		velocity	7.63	9.38	9.21	8.82	8.27	8.53		7.98	7.83	7.63	7.38	7.35	8.06		9.13	8.08	7.61
H1 lead leg	R	strides	21	13	13	14	14				14		15	17.2	121.2				
Kurokawa, Kazuki (JPN) (20		time	5.86	9.53	13.31	17.20	21.42	23.14	25.76	30.23	34.87	39.64	44.51		50.02	3 / 4		*Wamani (2023)*	
reaction time	0.142	interval		3.67	3.78	3.89	4.22		4.34	4.47	4.64	4.77	4.87	5.51			11.34	13.03	14.28
		velocity	7.68	9.54	9.26	9.00	8.29	8.64	8.06	7.83	7.54	7.34	7.19	7.26	8.00		9.26	8.06	7.35
H1 lead leg	L	strides	21	13	13	13	14		14	15	15	15	15	18	166				

2022 Bauhaus Galan (Stockholm, SWE) (TV Analysis)

FINAL date 30-Jun-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.66	9.24	12.80	16.42	20.18	21.78	24.08	28.22	32.48	36.84	41.40		46.80	6 / 1			
reaction time	0.147	interval		3.58	3.56	3.62	3.76		3.90	4.14	4.26	4.36	4.56	5.40			10.76	11.80	13.18
		velocity	7.95	9.78	9.83	9.67	9.31	9.18	8.97	8.45	8.22	8.03	7.68	7.41	8.55		9.76	8.90	7.97
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	13	13	16.7	149.7				
Allen, CJ (USA) (1995)		time	5.86	9.64	13.46	17.38	21.34	22.98	25.38	29.54	33.84	38.22	42.86		48.28	3 / 2			
reaction time	0.138	interval		3.78	3.82	3.92	3.96		4.04	4.16	4.30	4.38	4.64	5.42			11.52	12.16	13.32
		velocity	7.68	9.26	9.16	8.93	8.84	8.70	8.66	8.41	8.14	7.99	7.54	7.38	8.29		9.11	8.63	7.88
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	15	17.5	158.5				
McMaster, Kyron (IVB) (1997		time	5.78	9.42	13.18	16.96	20.86	22.50	24.92	29.24	33.68	38.22	42.96		48.58	5 / 3			
reaction time	0.161	interval		3.64	3.76	3.78	3.90		4.06	4.32	4.44	4.54	4.74	5.62			11.18	12.28	13.72
		velocity	7.79	9.62	9.31	9.26	8.97	8.89	8.62	8.10	7.88	7.71	7.38	7.12	8.23		9.39	8.55	7.65
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	15	17.5	160.5				
Mägi, Rasmus (EST) (1992)		time	5.86	9.56	13.28	17.10	20.98	22.58	25.04	29.36	33.90	38.48	43.28		48.77	4 / 4			
reaction time	0.155	interval		3.70	3.72	3.82	3.88		4.06	4.32	4.54	4.58	4.80	5.49			11.24	12.26	13.92
		velocity	7.68	9.46	9.41	9.16	9.02	8.86	8.62	8.10	7.71	7.64	7.29	7.29	8.20		9.34	8.56	7.54
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	15	17.7	160.7				
Bergtström, Carl (SWE) (200		time	5.82	9.58	13.38	17.32	21.36	23.06	25.58	29.90	34.32	38.92	43.70		48.97	7 / 5			
reaction time	0.178	interval		3.76	3.80	3.94	4.04		4.22	4.32	4.42	4.60	4.78	5.27			11.50	12.58	13.80
		velocity	7.73	9.31	9.21	8.88	8.66	8.67	8.29	8.10	7.92	7.61	7.32	7.59	8.17		9.13	8.35	7.61
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	19	172				
Watrin, Julien (BEL) (1992)		time	5.92	9.58	13.38	17.24	21.22	22.87	25.32	29.62	34.06	38.66	43.42		49.01	2 / 6			
reaction time	0.216	interval		3.66	3.80	3.86	3.98		4.10	4.30	4.44	4.60	4.76	5.59			11.32	12.38	13.80
		velocity	7.60	9.56	9.21	9.07	8.79	8.75	8.54	8.14	7.88	7.61	7.35	7.16	8.16		9.28	8.48	7.61
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	17.7	161.7				
McAlister, Chris (GBR) (199		time	6.12	9.92	13.72	17.60	21.70	23.39	25.92	30.38	34.86	39.48	44.32		49.76	8 / 7			
reaction time	0.175	interval		3.80	3.80	3.88	4.10		4.22	4.46	4.48	4.62	4.84	5.44			11.48	12.78	13.94
		velocity	7.35	9.21	9.21	9.02	8.54	8.55	8.29	7.85	7.81	7.58	7.23	7.35	8.04		9.15	8.22	7.53
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15		152				
Zazini, Sokwakhana (RSA) (2		time	5.92	9.76	13.60	17.46	21.44	23.11	25.56	29.90	34.34	39.02	43.94		49.80	1 / 8			
reaction time	0.171	interval		3.84	3.84	3.86	3.98		4.12	4.34	4.44	4.68	4.92	5.86			11.54	12.44	14.04
		velocity	7.60	9.11	9.11	9.07	8.79	8.65	8.50	8.06	7.88	7.48	7.11	6.83	8.03		9.10	8.44	7.48
H1 lead leg	L	strides	23	15	15	15	15		15	16	16	17	17	21	185				

2022 USATF National Championships (Eugene, OR) (TV Analysis)

FINAL date 26-Jun-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.84	9.51	13.34	17.34	21.35	22.97	25.36	29.43	33.60	37.80	42.14		47.04	7 / 1			
reaction time		interval		3.67	3.83	4.00	4.01		4.01	4.07	4.17	4.20	4.34	4.90			11.50	12.09	12.71
		velocity	7.71	9.54	9.14	8.75	8.73	8.71	8.73	8.60	8.39	8.33	8.06	8.16	8.50		9.13	8.68	8.26
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Bassitt, Trevor (USA) (1998)		time	5.97	9.67	13.44	17.25	21.19	22.78	25.22	29.43	33.70	38.10	42.54		47.47	5 / 2			
reaction time		interval		3.70	3.77	3.81	3.94		4.03	4.21	4.27	4.40	4.44	4.93	**PB**		11.28	12.18	13.11
		velocity	7.54	9.46	9.28	9.19	8.88	8.78	8.68	8.31	8.20	7.95	7.88	8.11	8.43		9.31	8.62	8.01
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Rosser, Khallifah (USA) (199		time	5.97	9.57	13.24	17.01	20.92	22.49	24.86	28.93	33.30	37.73	42.37		47.65	4 / 3			
reaction time		interval		3.60	3.67	3.77	3.91		3.94	4.07	4.37	4.43	4.64	5.28	**PB**		11.04	11.92	13.44
		velocity	7.54	9.72	9.54	9.28	8.95	8.89	8.88	8.60	8.01	7.90	7.54	7.58	8.39		9.51	8.81	7.81
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	14	17.7	159.7				
Allen, CJ (USA) (1995)		time	6.04	9.77	13.61	17.51	21.52	23.15	25.55	29.76	34.03	38.44	42.94		48.17	8 / 4			
reaction time		interval		3.73	3.84	3.90	4.01		4.03	4.21	4.27	4.41	4.50	5.23	**PB**		11.47	12.25	13.18
		velocity	7.45	9.38	9.11	8.97	8.73	8.64	8.68	8.31	8.20	7.94	7.78	7.65	8.30		9.15	8.57	7.97
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	17.5	158.5				
Hall, Quincy (USA) (1998)		time	6.10	9.81	13.61	17.55	21.62	23.22	25.76	29.96	34.26	38.77	43.34		48.33	6 / 5			
reaction time		interval		3.71	3.80	3.94	4.07		4.14	4.20	4.30	4.51	4.57	4.99			11.45	12.41	13.38
		velocity	7.38	9.43	9.21	8.88	8.60	8.61	8.45	8.33	8.14	7.76	7.66	8.02	8.28		9.17	8.46	7.85
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	14	16	156				
Lattin, Amere (USA) (1997)		time	5.87	9.51	13.28	17.08	21.05	22.70	25.12	29.56	34.06	38.73	43.37		48.53	2 / 6			
reaction time		interval		3.64	3.77	3.80	3.97		4.07	4.44	4.50	4.67	4.64	5.16	**PB**		11.21	12.48	13.81
		velocity	7.67	9.62	9.28	9.21	8.82	8.81	8.60	7.88	7.78	7.49	7.54	7.75	8.24		9.37	8.41	7.60
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	17	158				
Bailey, Aldrich (USA) (1994)		time	6.00	9.71	13.48	17.25	21.12	22.83	25.22	29.79	34.40	39.14	43.91		49.43	9 / 7			
reaction time		interval		3.71	3.77	3.77	3.87		4.10	4.57	4.61	4.74	4.77	5.52			11.25	12.54	14.12
		velocity	7.50	9.43	9.28	9.28	9.04	8.76	8.54	7.66	7.59	7.38	7.34	7.25	8.09		9.33	8.37	7.44

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	L	strides	21	13	13	12	12		13	14	13	14	14		139				
Downing, Quincy (USA) (19		time	5.97	9.61	13.25	17.05	20.95	22.61	25.05	29.53	34.13	39.04	44.04		50.09	3 / 8			
reaction time		interval		3.64	3.64	3.80	3.90		4.10	4.48	4.60	4.91	5.00	6.05			11.08	12.48	14.51
		velocity	7.54	9.62	9.62	9.21	8.97	8.85	8.54	7.81	7.61	7.13	7.00	6.61	7.99		9.48	8.41	7.24
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15		144				

2022 Bislett Games (Oslo, NOR) (TV Analysis)

FINAL date 16-Jun-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.74	9.42	13.16	16.92	20.82	22.56	24.96	29.20	33.42	37.76	42.16		47.26	7 / 1			
reaction time	0.184	interval		3.68	3.74	3.76	3.90		4.14	4.24	4.22	4.34	4.40	5.10			11.18	12.28	12.96
		velocity	7.84	9.51	9.36	9.31	8.97	8.87	8.45	8.25	8.29	8.06	7.95	7.84	8.46		9.39	8.55	8.10
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	13	13	16	149				
Mägi, Rasmus (EST) (1992)		time	5.84	9.56	13.28	17.12	21.04	22.73	25.22	29.44	33.76	38.28	43.00		48.51	6 / 2			
reaction time	0.165	interval		3.72	3.72	3.84	3.92		4.18	4.22	4.32	4.52	4.72	5.51			11.28	12.32	13.56
		velocity	7.71	9.41	9.41	9.11	8.93	8.80	8.37	8.29	8.10	7.74	7.42	7.26	8.25		9.31	8.52	7.74
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14	18	159				
Happio, Wilfried (FRA) (199		time	5.76	9.40	13.22	17.12	21.10	22.81	25.28	29.72	34.12	38.80	43.48		49.01	3 / 3			
reaction time	0.150	interval		3.64	3.82	3.90	3.98		4.18	4.44	4.40	4.68	4.68	5.53	PB		11.36	12.60	13.76
		velocity	7.81	9.62	9.16	8.97	8.79	8.77	8.37	7.88	7.95	7.48	7.48	7.23	8.16		9.24	8.33	7.63
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15	18	161				
Bergtström, Carl (SWE) (200		time	5.76	9.44	13.28	17.16	21.16	22.93	25.44	29.80	34.20	38.88	43.72		49.31	5 / 4			
reaction time	0.172	interval		3.68	3.84	3.88	4.00		4.28	4.36	4.40	4.68	4.84	5.59			11.40	12.64	13.92
		velocity	7.81	9.51	9.11	9.02	8.75	8.72	8.18	8.03	7.95	7.48	7.23	7.16	8.11		9.21	8.31	7.54
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	19.2	172.2				
Copello, Yasmani (TUR) (19		time	5.86	9.56	13.40	17.28	21.20	22.94	25.40	29.72	34.12	38.76	43.64		49.36	4 / 5			
reaction time	0.177	interval		3.70	3.84	3.88	3.92		4.20	4.32	4.40	4.64	4.88	5.72			11.42	12.44	13.92
		velocity	7.68	9.46	9.11	9.02	8.93	8.72	8.33	8.10	7.95	7.54	7.17	6.99	8.10		9.19	8.44	7.54
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	15	18	159				
Smidt, Nick (NED) (1997)		time	5.92	9.72	13.64	17.68		23.70	26.28	30.62	34.92	39.56	44.28		49.77	1 / 6			
reaction time	0.172	interval		3.80	3.92	4.04			8.60	4.34	4.30	4.64	4.72	5.49			11.76	12.94	13.66
		velocity	7.60	9.21	8.93	8.66		8.44	8.14	8.06	8.14	7.54	7.42	7.29	8.04		8.93	8.11	7.69
H1 lead leg	L	strides	21	13	13	14	14				14	15	15	18	137				
Zazini, Sokwakhana (RSA) (2		time	5.92	9.76	13.56	17.48	21.56	23.37	25.96	30.44	34.96	39.76	44.56		50.17	8 / 7			
reaction time	0.184	interval		3.84	3.80	3.92	4.08		4.40	4.48	4.52	4.80	4.80	5.61			11.56	12.96	14.12
		velocity	7.60	9.11	9.21	8.93	8.58	8.56	7.95	7.81	7.74	7.29	7.29	7.13	7.97		9.08	8.10	7.44
H1 lead leg	L	strides	23	15	15	15	15		16	16	17	17	17	20	186				
Angela, Ramsey (NED) (1999		time	5.92	9.68	13.52	17.52	21.84	23.62	26.18	30.58	34.78	39.68	44.52		50.21	2 / 8			
reaction time	0.184	interval		3.76	3.84	4.00	4.32		4.34	4.40	4.20	4.90	4.84	5.69			11.60	13.06	13.94
		velocity	7.60	9.31	9.11	8.75	8.10	8.47	8.06	7.95	8.33	7.14	7.23	7.03	7.97		9.05	8.04	7.53
H1 lead leg	R	strides	22	14	14	14	16		15		15	15	15	18.5	158.5				

2022 Japanese National Championsips (Osaka, JPN)

FINAL date 11-Jun-22

Wamani (2023) - race analysis of men's and women's 400m hurdles in the 2022 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kurokawa, Kazuki (JPN) (200		time	5.77	9.38	13.10	16.97	20.99		25.23	29.48	34.00	38.64	43.38		48.89	5 / 1			
reaction time	0.192	interval		3.61	3.72	3.87	4.02		4.24	4.25	4.52	4.64	4.74	5.51			11.20	12.51	13.90
		velocity	7.80	9.70	9.41	9.04	8.71		8.25	8.24	7.74	7.54	7.38	7.26	8.18		9.38	8.39	7.55
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18.2	164.2				
Kawagoe, Hiroya (JPN) (1997		time	6.01	9.84	13.76	17.82	21.94		26.21	30.63	35.10	39.66	44.33		49.72	4 / 2			
reaction time	0.193	interval		3.83	3.92	4.06	4.12		4.27	4.42	4.47	4.56	4.67	5.39	PB		11.81	12.81	13.70
		velocity	7.49	9.14	8.93	8.62	8.50		8.20	7.92	7.83	7.68	7.49	7.42	8.05		8.89	8.20	7.66
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.7	170.7				
Toyoda, Masaki (JPN) (1998)		time	6.14	10.06	14.08	18.23	22.46		26.64	30.88	35.25	39.77	44.48		49.85	9 / 3			
reaction time	0.211	interval		3.92	4.02	4.15	4.23		4.18	4.24	4.37	4.52	4.71	5.37			12.09	12.65	13.60
		velocity	7.33	8.93	8.71	8.43	8.27		8.37	8.25	8.01	7.74	7.43	7.45	8.02		8.68	8.30	7.72
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18.7	168.7				
Kishimoto, Takayuki (JPN) (		time	5.96	9.73	13.65	17.71	21.94		26.26	30.61	35.19	39.79	44.51		49.99	6 / 4			
reaction time	0.164	interval		3.77	3.92	4.06	4.23		4.32	4.35	4.58	4.60	4.72	5.48			11.75	12.90	13.90
		velocity	7.55	9.28	8.93	8.62	8.27		8.10	8.05	7.64	7.61	7.42	7.30	8.00		8.94	8.14	7.55
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.2	164.2				
Takahashi, Yuma (JPN) (1995		time	6.12	10.04	14.06	18.15	22.36		26.63	31.04	35.62	40.22	44.91		50.35	8 / 5			
reaction time	0.197	interval		3.92	4.02	4.09	4.21		4.27	4.41	4.58	4.60	4.69	5.44			12.03	12.89	13.87
		velocity	7.35	8.93	8.71	8.56	8.31		8.20	7.94	7.64	7.61	7.46	7.35	7.94		8.73	8.15	7.57
H1 lead leg	L	strides	21	14	14	14	14		14	15	15	15	15		151				
Onodera, Shota (JPN) (1999)		time	6.32	10.24	14.30	18.42	22.56		26.74	30.96	35.42	40.11	45.03		50.49	7 / 6			

reaction time	0.192	interval		3.92	4.06	4.12	4.14	4.18	4.22	4.46	4.69	4.92	5.46			12.10	12.54	14.07
		velocity	7.12	8.93	8.62	8.50	8.45	8.37	8.29	7.85	7.46	7.11	7.33	7.92		8.68	8.37	7.46
H1 lead leg	R	strides	22	15	15	15	15	15	15	15	15	17		159				
Matsushita, Yuki (JPN) (1991		time	6.16	10.04	14.05	18.15	22.29	26.59	31.05	35.72	40.44	45.15		50.57	3 / 7			
reaction time	0.171	interval		3.88	4.01	4.10	4.14	4.30	4.46	4.67	4.72	4.71	5.42			11.99	12.90	14.10
		velocity	7.31	9.02	8.73	8.54	8.45	8.14	7.85	7.49	7.42	7.43	7.38	7.91		8.76	8.14	7.45
H1 lead leg	R	strides	21	13	13	13	13	14	14	15	15	15		146				
Okamura, Kunihiro (JPN) (2(		time	6.16	9.91	13.78	17.77	21.87	26.26	30.70	35.37	40.21	45.10		50.70	2 / 8			
reaction time	0.212	interval		3.75	3.87	3.99	4.10	4.39	4.44	4.67	4.84	4.89	5.60			11.61	12.93	14.40
		velocity	7.31	9.33	9.04	8.77	8.54	7.97	7.88	7.49	7.23	7.16	7.14	7.89		9.04	8.12	7.29
H1 lead leg	L	strides	21	13	13	13	13	14	14	15	15	15		146				

2022 Japanese U20 National Championsips (Osaka, JPN)

FINAL date 11-Jun-22

Wamani (2023) - race analysis of men's and women's 400m hurdles in the 2022 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Konno, Ryoma (JPN) (2004)		time	6.21	10.24	14.36	18.59	22.76		27.03	31.35	35.72	40.14	44.73		50.17	9 / 1			
reaction time	0.177	interval		4.03	4.12	4.23	4.17		4.27	4.32	4.37	4.42	4.59	5.44	PB		12.38	12.76	13.38
		velocity	7.25	8.68	8.50	8.27	8.39		8.20	8.10	8.01	7.92	7.63	7.35	7.97		8.48	8.23	7.85
H1 lead leg	R	strides	21	15	15	15	15		15	15	15	15	15	18.5	174.5				
Moritaka, Sojiro (JPN) (2003)		time	6.11	10.13	14.20	18.35	22.56		26.92	31.40	36.02	40.61	45.38		50.71	8 / 2			
reaction time	0.216	interval		4.02	4.07	4.15	4.21		4.36	4.48	4.62	4.59	4.77	5.33	PB		12.24	13.05	13.98
		velocity	7.36	8.71	8.60	8.43	8.31		8.03	7.81	7.58	7.63	7.34	7.50	7.89		8.58	8.05	7.51
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	16	20	174				
Ogawa, Daiki (JPN) (2003)		time	6.12	10.14	14.18	18.26	22.46		26.76	31.11	35.74	40.57	45.41		50.72	7 / 3			
reaction time	0.173	interval		4.02	4.04	4.08	4.20		4.30	4.35	4.63	4.83	4.84	5.31			12.14	12.85	14.30
		velocity	7.35	8.71	8.66	8.58	8.33		8.14	8.05	7.56	7.25	7.23	7.53	7.89		8.65	8.17	7.34
H1 lead leg	L	strides	22	14	14	15	15		15	15	15	17	17	20.2	179.2				
Kyotake, Taiga (JPN) (2003)		time	6.29	10.31	14.38	18.49	22.76		27.08	31.46	36.10	40.85	45.60		50.96	4 / 4			
reaction time	0.203	interval		4.02	4.07	4.11	4.27		4.32	4.38	4.64	4.75	4.75	5.36	PB		12.20	12.97	14.14
		velocity	7.15	8.71	8.60	8.52	8.20		8.10	7.99	7.54	7.37	7.37	7.46	7.85		8.61	8.10	7.43
H1 lead leg	L	strides	22	14	14	15	15		15	15	15	15	15	19	174				
Morioka, Yuuki (JPN) (2003)		time	6.36	10.41	14.51	18.77	23.10		27.48	32.00	36.74	41.39	46.15		51.43	5 / 5			
reaction time	0.208	interval		4.05	4.10	4.26	4.33		4.38	4.52	4.74	4.65	4.76	5.28			12.41	13.23	14.15
		velocity	7.08	8.64	8.54	8.22	8.08		7.99	7.74	7.38	7.53	7.35	7.58	7.78		8.46	7.94	7.42
H1 lead leg	R	strides	22	14	14	14	14		14	14	15	15	15	18.7	169.7				
Muto, Yuhi (JPN) (2004)		time	6.39	10.33	14.41	18.52	22.86		27.29	31.82	36.47	41.21	46.06		51.46	3 / 6			
reaction time	0.189	interval		3.94	4.08	4.11	4.34		4.43	4.53	4.65	4.74	4.85	5.40	PB		12.13	13.30	14.24
		velocity	7.04	8.88	8.58	8.52	8.06		7.90	7.73	7.53	7.38	7.22	7.41	7.77		8.66	7.89	7.37
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Fuchigami, Syota (JPN) (200		time	6.16	10.09	14.11	18.31	22.69		27.16	31.70	36.49	41.36	46.25		51.86	2 / 7			
reaction time	0.187	interval		3.93	4.02	4.20	4.38		4.47	4.54	4.79	4.87	4.89	5.61			12.15	13.39	14.55
		velocity	7.31	8.91	8.71	8.33	7.99		7.83	7.71	7.31	7.19	7.16	7.13	7.71		8.64	7.84	7.22
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	15	19.2	172.2				

2022 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR) (TV Analysis)

FINAL date 05-Jun-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Rosser, Khallifah (USA) (199		time	5.67	9.23	12.97	16.77	20.67	22.38	24.73	28.93	33.40	37.97	42.70		48.25	6 / 1			
reaction time	0.166	interval		3.56	3.74	3.80	3.90		4.06	4.20	4.47	4.57	4.73	5.55			11.10	12.16	13.77
		velocity	7.94	9.83	9.36	9.21	8.97	8.94	8.62	8.33	7.83	7.66	7.40	7.21	8.29		9.46	8.63	7.63
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	15		143				
Mägi, Rasmus (EST) (1992)		time	5.63	9.50	13.23	17.07	21.00	22.67	25.03	29.37	33.87	38.50	43.23		48.73	4 / 2			
reaction time	0.146	interval		3.87	3.73	3.84	3.93		4.03	4.34	4.50	4.63	4.73	5.50			11.44	12.30	13.86
		velocity	7.99	9.04	9.38	9.11	8.91	8.82	8.68	8.06	7.78	7.56	7.40	7.27	8.21		9.18	8.54	7.58
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14		141				
Happio, Wilfried (FRA) (199		time	5.87	9.50	13.27	17.17	21.20	22.90	25.30	29.80	34.30	39.07	43.83		49.27	2 / 3			
reaction time	0.143	interval		3.63	3.77	3.90	4.03		4.10	4.50	4.50	4.77	4.76	5.44			11.30	12.63	14.03
		velocity	7.67	9.64	9.28	8.97	8.68	8.73	8.54	7.78	7.78	7.34	7.35	7.35	8.12		9.29	8.31	7.48
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15		143				
Copello, Yasmani (TUR) (19		time	5.87	9.60	13.30	17.20	21.17	22.89	25.27	29.67	34.17	38.87	43.67		49.29	5 / 4			
reaction time	0.177	interval		3.73	3.70	3.90	3.97		4.10	4.40	4.50	4.70	4.80	5.62			11.33	12.47	14.00
		velocity	7.67	9.38	9.46	8.97	8.82	8.74	8.54	7.95	7.78	7.45	7.29	7.12	8.12		9.27	8.42	7.50
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14		141				
Hyde, Jaheel (JAM) (1997)		time	5.67	9.23	12.90	16.67	20.50	22.22	24.67	28.97	33.50	38.27	43.37		49.35	8 / 5			
reaction time	0.150	interval		3.56	3.67	3.77	3.83		4.17	4.30	4.53	4.77	5.10	5.98			11.00	12.30	14.40
		velocity	7.94	9.83	9.54	9.28	9.14	9.00	8.39	8.14	7.73	7.34	6.86	6.69	8.11		9.55	8.54	7.29
H1 lead leg	L	strides	22	13	13	13	13		14	14	14	15	15		146				

Vaillant, Ludvy (FRA) (1995)		time	5.83	9.53	13.30	17.20	21.20	22.87	25.27	29.63	34.10	38.90	43.83		49.74	3 / 6			
reaction time	0.141	interval		3.70	3.77	3.90	4.00		4.07	4.36	4.47	4.80	4.93	5.91			11.37	12.43	14.20
		velocity	7.72	9.46	9.28	8.97	8.75	8.75	8.60	8.03	7.83	7.29	7.10	6.77	8.04		9.23	8.45	7.39
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15		144				
Hinti, Saad (MAR) (2002)		time	5.83	9.63	13.57	17.67	22.00	23.85	26.43	31.00	35.63				52.98	1 / 7			
reaction time	0.191	interval		3.80	3.94	4.10	4.33		4.43	4.57	4.63						11.84	13.33	
		velocity	7.72	9.21	8.88	8.54	8.08	8.39	7.90	7.66	7.56				7.55		8.87	7.88	
H1 lead leg	R	strides	21	14	14	15	15		15	15	15				124				
Warholm, Karsten (NOR) (19		time	5.67												dnf	7 / --			
reaction time	0.163	interval																	
		velocity	7.94																
H1 lead leg	L	strides	20												20				

2022 Prefontaine Classic (Eugene, OR) (TV Analysis)

FINAL date 28-May-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.75	9.36	13.00	16.73	20.56	22.33	24.54	28.70	32.93	37.53	42.00		47.23	7 / 1			
reaction time	0.194	interval		3.61	3.64	3.73	3.83		3.98	4.16	4.23	4.60	4.47	5.23			10.98	11.97	13.30
		velocity	7.83	9.70	9.62	9.38	9.14	8.96	8.79	8.41	8.27	7.61	7.83	7.65	8.47		9.56	8.77	7.89
H1 lead leg	L	strides	20	13	12	12	12		12	13	13	14	13	16	150				
Rosser, Khallifah (USA) (199		time	5.70	9.33	13.06	16.90	20.87	22.62	24.90	29.06	33.33	37.90	42.56		48.10	4 / 2			
reaction time	0.158	interval		3.63	3.73	3.84	3.97		4.03	4.16	4.27	4.57	4.66	5.54	PB		11.20	12.16	13.50
		velocity	7.89	9.64	9.38	9.11	8.82	8.84	8.68	8.41	8.20	7.66	7.51	7.22	8.32		9.38	8.63	7.78
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Hall, Quincy (USA) (1995)		time	5.80	9.53	13.30	17.16	21.10	23.83	25.20	29.46	33.73	38.37	43.00		48.10	6 / 3			
reaction time	0.213	interval		3.73	3.77	3.86	3.94		4.10	4.26	4.27	4.64	4.63	5.10	PB		11.36	12.30	13.54
		velocity	7.76	9.38	9.28	9.07	8.88	8.39	8.54	8.22	8.20	7.54	7.56	7.84	8.32		9.24	8.54	7.75
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	14	16	156				
Bergtström, Carl (SWE) (200		time	5.70	9.46	13.27	17.17	21.17	23.02	25.33	29.58	33.93	38.53	43.26		48.52	9 / 4			
reaction time	0.172	interval		3.76	3.81	3.90	4.00		4.16	4.25	4.35	4.60	4.73	5.26	PB		11.47	12.41	13.68
		velocity	7.89	9.31	9.19	8.97	8.75	8.69	8.41	8.24	8.05	7.61	7.40	7.60	8.24		9.15	8.46	7.68
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15		153				
Mägi, Rasmus (EST) (1992)		time	5.87	9.66	13.50	17.36	21.30	23.05	25.35	29.60	34.09	38.73	43.33		48.66	3 / 5			
reaction time	0.174	interval		3.79	3.84	3.86	3.94		4.05	4.25	4.49	4.64	4.60	5.33			11.49	12.24	13.73
		velocity	7.67	9.23	9.11	9.07	8.88	8.68	8.64	8.24	7.80	7.54	7.61	7.50	8.22		9.14	8.58	7.65
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	14		142				
Allen, CJ (USA) (1995)		time	5.70	9.36	13.13	17.00	21.00	22.74	25.10	29.33	33.70	38.33	43.13		48.76	5 / 6			
reaction time	0.156	interval		3.66	3.77	3.87	4.00		4.10	4.23	4.37	4.63	4.80	5.63			11.30	12.33	13.80
		velocity	7.89	9.56	9.28	9.04	8.75	8.80	8.54	8.27	8.01	7.56	7.29	7.10	8.20		9.29	8.52	7.61
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	15	15		142				
Hyde, Jaheel (JAM) (1997)		time	5.73	9.50	13.40	17.30	21.27	23.07	25.50	29.93	34.57	39.50			50.38	2 / 7			
reaction time	0.157	interval		3.77	3.90	3.90	3.97		4.23	4.43	4.64	4.93					11.57	12.63	
		velocity	7.85	9.28	8.97	8.97	8.82	8.67	8.27	7.90	7.54	7.10			7.94		9.08	8.31	
H1 lead leg	L	strides	21	13	13	13	13		14	15	15	15			132				
Mowatt, Kemar (JAM) (1995)		time	5.80	9.56	13.36	17.33	21.34	23.20	25.56	30.07	34.73	39.73			50.81	8 / 8			
reaction time	0.157	interval		3.76	3.80	3.97	4.01		4.22	4.51	4.66	5.00					11.53	12.74	
		velocity	7.76	9.31	9.21	8.82	8.73	8.62	8.29	7.76	7.51	7.00			7.87		9.11	8.24	
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	15			130				

2022 Doha Diamond League (Doha, QAT) (TV Analysis)

Final date 13-May-22

Henson (2022) - Athlete First: 2022 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.70	9.37	13.11	17.12	21.20	22.9	25.36	29.44	33.63	37.83	42.14		47.24	7 / 1			
reaction time	0.172	interval		3.67	3.74	4.01	4.08		4.16	4.08	4.19	4.20	4.31	5.10			11.42	12.32	12.70
		velocity	7.89	9.54	9.36	8.73	8.58	8.73	8.41	8.58	8.35	8.33	8.12	7.84	8.47		9.19	8.52	8.27
H1 lead leg	L	strides	20	13	12	13	13		13	13	13	13	13		136				
Benjamin, Rai (USA) (1997)		time	5.60	9.18	13.01	16.98	21.12	22.8	25.24	29.30	33.56	37.87	42.27		47.49	6 / 2			
reaction time	0.206	interval		3.58	3.83	3.97	4.14		4.12	4.06	4.26	4.31	4.40	5.22			11.38	12.32	12.97
		velocity	8.04	9.78	9.14	8.82	8.45	8.77	8.50	8.62	8.22	8.12	7.95	7.66	8.42		9.23	8.52	8.10
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13		137				
Barr, Thomas (IRL) (1992)		time	5.90	9.67	13.58	17.65	21.85	23.6	26.16		35.33	39.91	44.44		49.67	2 / 3			
reaction time	0.171	interval		3.77	3.91	4.07	4.20		4.31		9.17	4.58	4.53	5.23			11.75		
		velocity	7.63	9.28	8.95	8.60	8.33	8.47	8.12		7.63	7.64	7.73	7.65	8.05		8.94		
H1 lead leg	L	strides	20	13	13	13	13		13			14	14		113				
McMaster, Kyron (IVB) (1997		time	5.70	9.37	13.18	17.28	21.52	23.3	25.89		34.93	39.57	44.28		49.93	3 / 4			
reaction time	0.208	interval		3.67	3.81	4.10	4.24		4.37		9.04	4.64	4.71	5.65			11.58		

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		velocity	7.89	9.54	9.19	8.54	8.25	8.58	8.01		7.74	7.54	7.43	7.08	8.01		9.07		
H1 lead leg	L	strides	21	13	13	13	13		14			14	14		115				
Hyde, Jaheel (JAM) (1997)		time	5.87	9.67	13.71	17.81	22.05	24.2	26.52	30.96	35.40	39.90			50.23	8 / 5			
reaction time	0.167	interval		3.80	4.04	4.10	4.24		4.47	4.44	4.44	4.50					11.94	13.15	
		velocity	7.67	9.21	8.66	8.54	8.25	8.26	7.83	7.88	7.88	7.78			7.96		8.79	7.98	
H1 lead leg	L	strides	22	14	14	14	14		15	14	14	14			135				
Copello, Yasmani (TUR) (19		time	5.97	9.84	13.91	18.15	22.35	24.2	26.73		35.87	40.51			50.30	5 / 6			
reaction time	0.191	interval		3.87	4.07	4.24	4.20		4.38		9.14	4.64					12.18		
		velocity	7.54	9.04	8.60	8.25	8.33	8.26	7.99		7.66	7.54			7.95		8.62		
H1 lead leg	R	strides	20	13	13	13	13		13			14			99				
Madari Palliyalil, Jabir (IND) (		time	5.90	9.67	13.68	17.82	22.05	23.8	26.32		35.27	39.97	44.81		50.42	1 / 7			
reaction time	0.156	interval		3.77	4.01	4.14	4.23		4.27		8.95	4.70	4.84	5.61			11.92		
		velocity	7.63	9.28	8.73	8.45	8.27	8.40	8.20		7.82	7.45	7.23	7.13	7.93		8.81		
H1 lead leg	L	strides	22	15	15	15	15		15			16	16		129				

2022 Seiko Golden Grand Prix (Tokyo, JPN)

FINAL date 08-May-22

Wamani (2023) - race analysis of men's and women's 400m hurdles in the 2022 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.89	9.56	13.25	17.02	20.89		24.91	29.08	33.63	38.39	43.23		48.60	6 / 1			
reaction time	0.219	interval		3.67	3.69	3.77	3.87		4.02	4.17	4.55	4.76	4.84	5.37			11.13	12.06	14.15
		velocity	7.64	9.54	9.49	9.28	9.04		8.71	8.39	7.69	7.35	7.23	7.45	8.23		9.43	8.71	7.42
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	14	14	17	156				
Kurokawa, Kazuki (JPN) (20(		time	5.86	9.57	13.26	17.05	21.02		25.19	29.48	33.98	38.69	43.54		49.08	7 / 2			
reaction time	0.206	interval		3.71	3.69	3.79	3.97		4.17	4.29	4.50	4.71	4.85	5.54			11.19	12.43	14.06
		velocity	7.68	9.43	9.49	9.23	8.82		8.39	8.16	7.78	7.43	7.22	7.22	8.15		9.38	8.45	7.47
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18.5	164.5				
Chen Chieh (TPE) (1992)		time	5.96	9.61	13.35	17.15	21.15		25.43	29.88	34.38	39.08	43.94		49.39	9 / 3			
reaction time	0.178	interval		3.65	3.74	3.80	4.00		4.28	4.45	4.50	4.70	4.86	5.45			11.19	12.73	14.06
		velocity	7.55	9.59	9.36	9.21	8.75		8.18	7.87	7.78	7.45	7.20	7.34	8.10		9.38	8.25	7.47
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18	164				
Toyoda, Masaki (JPN) (1998)		time	6.09	10.09	14.21	18.37	22.56		26.78	31.03	35.42	39.89	44.49		49.76	4 / 4			
reaction time	0.183	interval		4.00	4.12	4.16	4.19		4.22	4.25	4.39	4.47	4.60	5.27			12.28	12.66	13.46
		velocity	7.39	8.75	8.50	8.41	8.35		8.29	8.24	7.97	7.83	7.61	7.59	8.04		8.55	8.29	7.80
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18	168				
Kishimoto, Takayuki (JPN) (		time	5.91	9.69	13.58	17.60	21.74		26.03	30.43	35.02	39.61	44.41		49.86	5 / 5			
reaction time	0.138	interval		3.78	3.89	4.02	4.14		4.29	4.40	4.59	4.59	4.80	5.45			11.69	12.83	13.98
		velocity	7.61	9.26	9.00	8.71	8.45		8.16	7.95	7.63	7.63	7.29	7.34	8.02		8.98	8.18	7.51
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.2	164.2				
Yamamoto, Tatsuhiro (JPN)		time	6.11	10.06	14.06	18.12	22.26		26.51	30.88	35.35	39.86	44.54		49.96	3 / 6			
reaction time	0.134	interval		3.95	4.00	4.06	4.14		4.25	4.37	4.47	4.51	4.68	5.42			12.01	12.76	13.66
		velocity	7.36	8.86	8.75	8.62	8.45		8.24	8.01	7.83	7.76	7.48	7.38	8.01		8.74	8.23	7.69
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18.7	168.7				
Onodera, Shota (JPN) (1999)		time	6.39	10.44	14.55	18.64	22.81		26.99	31.31	35.77	40.24	44.88		50.25	1 / 7			
reaction time	0.243	interval		4.05	4.11	4.09	4.17		4.18	4.32	4.46	4.47	4.64	5.37	**PB**		12.25	12.67	13.57
		velocity	7.04	8.64	8.52	8.56	8.39		8.37	8.10	7.85	7.83	7.54	7.45	7.96		8.57	8.29	7.74
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	20	177				
Matsushita, Yuki (JPN) (1991		time	6.16	10.08	14.01	18.02	22.07		26.43	30.91	35.52	40.14	44.84		50.31	2 / 8			
reaction time	0.199	interval		3.92	3.93	4.01	4.05		4.36	4.48	4.61	4.62	4.70	5.47			11.86	12.89	13.93
		velocity	7.31	8.93	8.91	8.73	8.64		8.03	7.81	7.59	7.58	7.45	7.31	7.95		8.85	8.15	7.54
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Kawagoe, Hiroya (JPN) (1997		time	5.97	9.73	13.70	17.67	21.79		26.21	30.76	35.40	40.12	45.01		50.66	8 / 9			
reaction time	0.177	interval		3.76	3.97	3.97	4.12		4.42	4.55	4.64	4.72	4.89	5.65			11.70	13.09	14.25
		velocity	7.54	9.31	8.82	8.82	8.50		7.92	7.69	7.54	7.42	7.16	7.08	7.90		8.97	8.02	7.37
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.2	170.2				

2022 Michitaka Kinami Memorial (Osaka, JPN)

FINAL date 01-May-22

Wamani (2023) - race analysis of men's and women's 400m hurdles in the 2022 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kurokawa, Kazuki (JPN) (20(		time	5.91	9.54	13.28	17.08	21.02		25.21	29.48	33.95	38.64	43.44		48.90	6 / 1			
reaction time	0.157	interval		3.63	3.74	3.80	3.94		4.19	4.27	4.47	4.69	4.80	5.46			11.17	12.40	13.96
		velocity	7.61	9.64	9.36	9.21	8.88		8.35	8.20	7.83	7.46	7.29	7.33	8.18		9.40	8.47	7.52
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Chen Chieh (TPE) (1992)		time	5.97	9.64	13.41	17.27	21.22		25.51	29.93	34.47	39.16	43.96		49.31	7 / 2			
reaction time	0.171	interval		3.67	3.77	3.86	3.95		4.29	4.42	4.54	4.69	4.80	5.35			11.30	12.66	14.03
		velocity	7.54	9.54	9.28	9.07	8.86		8.16	7.92	7.71	7.46	7.29	7.48	8.11		9.29	8.29	7.48
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Peng Ming-Yang (TPE) (1998	time	6.01	9.71	13.51	17.42	21.42		25.64	29.93	34.55	39.29	44.08		49.32	5 / 3			
reaction time 0.172	interval		3.70	3.80	3.91	4.00		4.22	4.29	4.62	4.74	4.79	5.24	PB		11.41	12.51	14.15
	velocity	7.49	9.46	9.21	8.95	8.75		8.29	8.16	7.58	7.38	7.31	7.63	8.11		9.20	8.39	7.42
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Kishimoto, Takayuki (JPN) (	time	5.94	9.79	13.76	17.83	21.96		26.18	30.46	34.97	39.57	44.34		49.84	9 / 4			
reaction time 0.125	interval		3.85	3.97	4.07	4.13		4.22	4.28	4.51	4.60	4.77	5.50			11.89	12.63	13.88
	velocity	7.58	9.09	8.82	8.60	8.47		8.29	8.18	7.76	7.61	7.34	7.27	8.03		8.83	8.31	7.56
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Toyoda, Masaki (JPN) (1998)	time	6.11	9.98	13.95	18.05	22.12		26.24	30.46	34.87	39.49	44.34		49.87	4 / 5			
reaction time 0.183	interval		3.87	3.97	4.10	4.07		4.12	4.22	4.41	4.62	4.85	5.53			11.94	12.41	13.88
	velocity	7.36	9.04	8.82	8.54	8.60		8.50	8.29	7.94	7.58	7.22	7.23	8.02		8.79	8.46	7.56
H1 lead leg	strides		14	14	14	14		14	14	15	15	15		129				
Kawagoe, Hiroya (JPN) (1997	time	6.02	9.84	13.85	17.92	22.07		26.39	30.88	35.47	40.14	44.91		50.36	8 / 6			
reaction time 0.167	interval		3.82	4.01	4.07	4.15		4.32	4.49	4.59	4.67	4.77	5.45			11.90	12.96	14.03
	velocity	7.48	9.16	8.73	8.60	8.43		8.10	7.80	7.63	7.49	7.34	7.34	7.94		8.82	8.10	7.48
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				
Onodera, Shota (JPN) (1999)	time	6.31	10.28	14.35	18.47	22.62		26.79	31.03	35.57	40.24	45.10		50.52	3 / 7			
reaction time 0.210	interval		3.97	4.07	4.12	4.15		4.17	4.24	4.54	4.67	4.86	5.42			12.16	12.56	14.07
	velocity	7.13	8.82	8.60	8.50	8.43		8.39	8.25	7.71	7.49	7.20	7.38	7.92		8.63	8.36	7.46
H1 lead leg	strides		15	15	15	15		15	15	15	15	17		137				
Matsushita, Yuki (JPN) (1991	time	6.14	10.01	13.98	18.07	22.17		26.34	30.95	35.54	40.19	44.99		50.56	2 / 8			
reaction time 0.139	interval		3.87	3.97	4.09	4.10		4.17	4.61	4.59	4.65	4.80	5.57			11.93	12.88	14.04
	velocity	7.33	9.04	8.82	8.56	8.54		8.39	7.59	7.63	7.53	7.29	7.18	7.91		8.80	8.15	7.48
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				

2021 ISTAF (Berlin, GER) (TV Analysis)

FINAL date 12-Sep-21

Henson (2021) - Athlete First: 2021 Karsten Warholm 400m Hurdles World Record Season

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19	time	5.76	9.28	12.96	16.70	20.56		24.56	28.76	33.12	37.80	42.54		48.08	7 / 1			
reaction time 0.189	interval		3.52	3.68	3.74	3.86		4.00	4.20	4.36	4.68	4.74	5.54			10.94	12.06	13.78
	velocity	7.81	9.94	9.51	9.36	9.07		8.75	8.33	8.03	7.48	7.38	7.22	8.32		9.60	8.71	7.62
H1 lead leg L	strides	20	13	13	13	13		13	13	13	15	15	18.5	159.5				
Mägi, Rasmus (EST) (1992)	time	6.04		13.64	17.52	21.48		25.60	29.92		38.92	43.52		48.73	6 / 2			
reaction time 0.191	interval			7.60	3.88	3.96		4.12	4.32		9.00	4.60	5.21			11.48	12.40	13.60
	velocity	7.45		9.21	9.02	8.84		8.50	8.10		7.78	7.61	7.68	8.21		9.15	8.47	7.72
H1 lead leg R	strides	20			13			13	13	14		14	17	104				
Hyde, Jaheel (JAM) (1997)	time	5.80		13.28	17.12			25.32	29.68	34.08	38.68	43.44		48.95	4 / 3			
reaction time 0.180	interval			7.48	3.84			8.20	4.36	4.40	4.60	4.76	5.51			11.32	12.56	13.76
	velocity	7.76		9.36	9.11			8.54	8.03	7.95	7.61	7.35	7.26	8.17		9.28	8.36	7.63
H1 lead leg L	strides	21			13				14	14		15	18	95				

2021 Weltklasse (Zürich, SUI) (TV Analysis)

FINAL date 09-Sep-21

Henson (2021) - Athlete First: 2021 year end hurdle report

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19	time	5.72	9.28	12.96	16.72	20.56	22.1	24.56	28.68	32.88	37.44	42.08		47.35	7 / 1			
reaction time 0.150	interval		3.56	3.68	3.76	3.84		4.00	4.12	4.20	4.56	4.64	5.27			11.00	11.96	13.40
	velocity	7.87	9.83	9.51	9.31	9.11	9.05	8.75	8.50	8.33	7.68	7.54	7.59	8.45		9.55	8.78	7.84
H1 lead leg L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
dos Santos, Alison (BRA) (2	time	5.80		13.24	17.04	20.92	22.6	25.00	29.12	33.36	37.80	42.44		47.81	6 / 2			
reaction time 0.181	interval			7.44	3.80	3.88		4.08	4.12	4.24	4.44	4.64	5.37			11.24	12.08	13.32
	velocity	7.76		9.41	9.21	9.02	8.85	8.58	8.50	8.25	7.88	7.54	7.45	8.37		9.34	8.69	7.88
H1 lead leg L	strides	20			12	12		13	13	13	13	14	16.5	126.5				
McMaster, Kyron (IVB) (1997	time	5.72		13.08	16.88	20.76	22.4	24.80	29.00	33.36	37.88	42.65		48.24	5 / 3			
reaction time 0.160	interval			7.36	3.80	3.88		4.04	4.20	4.36	4.52	4.77	5.59			11.16	12.12	13.65
	velocity	7.87		9.51	9.21	9.02	8.93	8.66	8.33	8.03	7.74	7.34	7.16	8.29		9.41	8.66	7.69
H1 lead leg L	strides	21			13	13		13	14	14	14	14	17.5	133.5				
Mägi, Rasmus (EST) (1992)	time	6.00				21.44	23.0	25.56	29.84		38.80	43.52		48.84	3 / 4			
reaction time 0.158	interval					15.44		4.12	4.28		8.96	4.72	5.32					13.68
	velocity	7.50				9.07	8.70	8.50	8.18		7.81	7.42	7.52	8.19				7.68
H1 lead leg R	strides	20						13	13			14	17	77				
Preis, Constantin (GER) (199	time	6.08	9.84	13.84	17.84	21.96	23.7	26.20	30.44	34.84	39.36	43.92		49.08	8 / 5			
reaction time 0.259	interval		3.76	4.00	4.00	4.12		4.24	4.24	4.40	4.52	4.56	5.16			11.76	12.60	13.48
	velocity	7.40	9.31	8.75	8.75	8.50	8.44	8.25	8.25	7.95	7.74	7.68	7.75	8.15		8.93	8.33	7.79
H1 lead leg L	strides	21	13	14	14	14		14	15	15				120				
Angela, Ramsey (NED) (1999	time	6.04				21.72	23.4	25.92	30.24		39.28	44.00		49.39	2 / 6			
reaction time 0.167	interval					15.68		4.20	4.32		9.04	4.72	5.39					13.76
	velocity	7.45				8.93	8.55	8.33	8.10		7.74	7.42	7.42	8.10				7.63

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	R	strides	22					15	15				18	70				
McAlister, Chris (GBR) (1995		time	6.24			22.40	24.1	26.64			39.88	44.48		49.73	1 / 7			
reaction time	0.168	interval				16.16		4.24			13.24	4.60	5.25					
		velocity	7.21			8.66	8.30	8.25			7.93	7.61	7.62	8.04				
H1 lead leg	R	strides	22					14				15		51				

2021 Memorial van Damme (Brussels, BEL) (TV Analysis)

FINAL date 03-Sep-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.84	9.52	13.32	17.16	21.24	23.0	25.44	29.60	33.80	38.28	42.92		48.23	6 / 1			
reaction time	0.181	interval		3.68	3.80	3.84	4.08		4.20	4.16	4.20	4.48	4.64	5.31			11.32	12.44	13.32
		velocity	7.71	9.51	9.21	9.11	8.58	8.70	8.33	8.41	8.33	7.81	7.54	7.53	8.29		9.28	8.44	7.88
H1 lead leg	L	strides	20	13	13	12	12		13	13	13	13	13	16.5	151.5				
McMaster, Kyron (IVB) (1997		time	5.76	9.40	13.20	17.04	21.00	22.7	25.12	29.40	33.68	38.16	42.96		48.31	5 / 2			
reaction time	0.176	interval		3.64	3.80	3.84	3.96		4.12	4.28	4.28	4.48	4.80	5.35			11.28	12.36	13.56
		velocity	7.81	9.62	9.21	9.11	8.84	8.81	8.50	8.18	8.18	7.81	7.29	7.48	8.28		9.31	8.50	7.74
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	15	17.5	159.5				
Copello, Yasmani (TUR) (198		time	5.84	9.56	13.32	17.24	21.20		25.32	29.72	34.12	38.60	43.16		48.45	4 / 3			
reaction time	0.149	interval		3.72	3.76	3.92	3.96		4.12	4.40	4.40	4.48	4.56	5.29			11.40	12.48	13.44
		velocity	7.71	9.41	9.31	8.93	8.84		8.50	7.95	7.95	7.81	7.68	7.56	8.26		9.21	8.41	7.81
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17.7	158.7				
Hyde, Jaheel (JAM) (1997)		time	5.84	9.56	13.36	17.24	21.32	23.1	25.52	29.72	34.04	38.60	43.32		48.91	7 / 4			
reaction time	0.166	interval		3.72	3.80	3.88	4.08		4.20	4.20	4.32	4.56	4.72	5.59			11.40	12.48	13.60
		velocity	7.71	9.41	9.21	9.02	8.58	8.66	8.33	8.33	8.10	7.68	7.42	7.16	8.18		9.21	8.41	7.72
H1 lead leg	L	strides	22	13	13	13	13		14	14	14	15	15	18	164				
Mägi, Rasmus (EST) (1992)		time	6.00	9.80	13.64	17.60	21.64	23.4	25.80	30.12	34.64	39.24	43.92		49.13	3 / 5			
reaction time	0.178	interval		3.80	3.84	3.96	4.04		4.16	4.32	4.52	4.60	4.68	5.21			11.60	12.52	13.80
		velocity	7.50	9.21	9.11	8.84	8.66	8.55	8.41	8.10	7.74	7.61	7.48	7.68	8.14		9.05	8.39	7.61
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17	158				
Angela, Ramsey (NED) (1999		time	6.08	9.96	13.80	17.84	21.92	23.7	26.12	30.44	34.88	39.48	44.24		49.53	2 / 6			
reaction time	0.197	interval		3.88	3.84	4.04	4.08		4.20	4.32	4.44	4.60	4.76	5.29			11.76	12.60	13.80
		velocity	7.40	9.02	9.11	8.66	8.58	8.44	8.33	8.10	7.88	7.61	7.35	7.56	8.08		8.93	8.33	7.61
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	15	18	171				
McAlister, Chris (GBR) (1995		time	6.08	9.92	13.92	18.00	22.08	23.9	26.28	30.72	35.32	39.96	44.80		50.09	1 / 7			
reaction time	0.144	interval		3.84	4.00	4.08	4.08		4.20	4.44	4.60	4.64	4.84	5.29			11.92	12.72	14.08
		velocity	7.40	9.11	8.75	8.58	8.58	8.37	8.33	7.88	7.61	7.54	7.23	7.56	7.99		8.81	8.25	7.46
H1 lead leg	R	strides	22	14	14	14	14		14		15	15	15		137				
Preis, Constantin (GER) (199		time	6.20	10.00	14.00	18.08	22.28	24.1	26.60	31.08	35.60	40.16			50.12	8 / 8			
reaction time	0.303	interval		3.80	4.00	4.08	4.20		4.32	4.48	4.52	4.56					11.88	13.00	
		velocity	7.26	9.21	8.75	8.58	8.33	8.30	8.10	7.81	7.74	7.68			7.98		8.84	8.08	
H1 lead leg	L	strides	21	13	14	14	14		15	15	15	15			136				

2020 Olympic Games (Tokyo, JPN) (TV Analysis)

FINAL date 03-Aug-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.60	9.08	12.62	16.28	19.96		23.86	27.92	32.04	36.32	40.76		45.94	6 / 1			
reaction time	0.145	interval		3.48	3.54	3.66	3.68		3.90	4.06	4.12	4.28	4.44	5.18	**WR**		10.68	11.64	12.84
		velocity	8.04	10.06	9.89	9.56	9.51		8.97	8.62	8.50	8.18	7.88	7.72	8.71		9.83	9.02	8.18
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
Benjamin, Rai (USA) (1997)		time	5.64	9.20	12.84	16.52	20.28		24.16	28.16	32.24	36.44	40.80		46.17	5 / 2			
reaction time	0.168	interval		3.56	3.64	3.68	3.76		3.88	4.00	4.08	4.20	4.36	5.37	**AR**		10.88	11.64	12.64
		velocity	7.98	9.83	9.62	9.51	9.31		9.02	8.75	8.58	8.33	8.03	7.45	8.66		9.65	9.02	8.31
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	17	154				
dos Santos, Alison (BRA) (2		time	5.76	9.36	13.08	16.76	20.60		24.64	28.80	33.00	37.26	41.58		46.72	7 / 3			
reaction time	0.156	interval		3.60	3.72	3.68	3.84		4.04	4.16	4.20	4.26	4.32	5.14	**AR**		11.00	12.04	12.78
		velocity	7.81	9.72	9.41	9.51	9.11		8.66	8.41	8.33	8.22	8.10	7.78	8.56		9.55	8.72	8.22
H1 lead leg	L	strides	20	13	13	12	12		13	13	13	14	13	16.2	152.2				
McMaster, Kyron (IVB) (1997		time	5.68	9.24	12.96	16.72	20.60		24.60	28.86	33.20	37.60	41.96		47.08	4 / 4			
reaction time	0.157	interval		3.56	3.72	3.76	3.88		4.00	4.26	4.34	4.40	4.36	5.12	**NR PB**		11.04	12.14	13.10
		velocity	7.92	9.83	9.41	9.31	9.02		8.75	8.22	8.06	7.95	8.03	7.81	8.50		9.51	8.65	8.02
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17	158				
Samba, Abderrahman (QAT)		time	5.84	9.48	13.12	16.88	20.72		24.80	28.92	33.16	37.48	41.90		47.12	8 / 5			
reaction time	0.186	interval		3.64	3.64	3.76	3.84		4.08	4.12	4.24	4.32	4.42	5.22			11.04	12.04	12.98
		velocity	7.71	9.62	9.62	9.31	9.11		8.58	8.50	8.25	8.10	7.92	7.66	8.49		9.51	8.72	8.09
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Copello, Yasmani (TUR) (198		time	5.72	9.36	13.04	16.80	20.68		24.72	29.08	33.44	37.96	42.48		47.81	3 / 6			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.166	interval		3.64	3.68	3.76	3.88	4.04	4.36	4.36	4.52	4.52	5.33	=NR =PB		11.08	12.28	13.40
		velocity	7.87	9.62	9.51	9.31	9.02	8.66	8.03	8.03	7.74	7.74	7.50	8.37		9.48	8.55	7.84
H1 lead leg	R	strides	20	13	13	13	13	13	14	14	14	14	17.2	158.2				
Mägi, Rasmus (EST) (1992)		time	5.92	9.60	13.32	17.16	21.12	25.28	29.56	33.96	38.44	42.88		48.11	9 / 7			
reaction time	0.167	interval		3.68	3.72	3.84	3.96	4.16	4.28	4.40	4.48	4.44	5.23			11.24	12.40	13.32
		velocity	7.60	9.51	9.41	9.11	8.84	8.41	8.18	7.95	7.81	7.88	7.65	8.31		9.34	8.47	7.88
H1 lead leg	L	strides	20	13	13	13	13	13	13	14	14	14		140				
Sibilio, Alessandro (ITA) (19		time	6.04	9.84	13.76	17.68	21.64	25.84		34.84	39.24	43.68		48.77	2 / 8			
reaction time	0.144	interval		3.80	3.92	3.92	3.96	4.20		9.00	4.40	4.44	5.09			11.64		
		velocity	7.45	9.21	8.93	8.93	8.84	8.33		7.78	7.95	7.88	7.86	8.20		9.02		
H1 lead leg	R	strides	21	13	13	13	13	13	14		15	15		130				

Semi-Final 1

date 01-Aug-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.60	9.14	12.76	16.51	20.42		24.42	28.59	32.93	37.32	42.07		47.30	7 / 1			
reaction time	0.156	interval		3.54	3.62	3.75	3.91		4.00	4.17	4.34	4.39	4.75	5.23			10.91	12.08	13.48
		velocity	8.04	9.89	9.67	9.33	8.95		8.75	8.39	8.06	7.97	7.37	7.65	8.46		9.62	8.69	7.79
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	17.5	156.5				
Benjamin, Rai (USA) (1997)		time	5.57	9.11	12.78	16.51	20.45		24.42	28.56	32.86	37.30	41.92		47.37	5 / 2			
reaction time	0.184	interval		3.54	3.67	3.73	3.94		3.97	4.14	4.30	4.44	4.62	5.45			10.94	12.05	13.36
		velocity	8.08	9.89	9.54	9.38	8.88		8.82	8.45	8.14	7.88	7.58	7.34	8.44		9.60	8.71	7.86
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16.7	153.7				
Copello, Yasmani (TUR) (19		time	5.77	9.41	13.14	16.95	20.89		24.92	29.23	33.57	38.04	42.54		47.88	4 / 3			
reaction time	0.183	interval		3.64	3.73	3.81	3.94		4.03	4.31	4.34	4.47	4.50	5.34			11.18	12.28	13.31
		velocity	7.80	9.62	9.38	9.19	8.88		8.68	8.12	8.06	7.83	7.78	7.49	8.35		9.39	8.55	7.89
H1 lead leg	R	strides	20	13	13	13	13		13	14	14		14	17.2	144.2				

Heat 3

date 30-Jul-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.67	9.31	13.04	16.98	21.02		25.16	29.36	33.66	38.30	43.02		48.65	8 / 1			
reaction time	0.157	interval		3.64	3.73	3.94	4.04		4.14	4.20	4.30	4.64	4.72	5.63			11.31	12.38	13.66
		velocity	7.94	9.62	9.38	8.88	8.66		8.45	8.33	8.14	7.54	7.42	7.10	8.22		9.28	8.48	7.69
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17	158				

2021 Japanese High School National Championships (Fukui, JPN)

FINAL

date 30-Jul-21

Shibayama (2021) - national high school and U20 national championhsips

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Takahasi, Ryosuke (JPN) (20		time	6.17	10.14	14.41	18.64	22.97		27.46	32.02	36.72	41.57	46.46		51.69	6 / 1			
reaction time	0.161	interval		3.97	4.27	4.23	4.33		4.49	4.56	4.70	4.85	4.89	5.23			12.47	13.38	14.44
		velocity	7.29	8.82	8.20	8.27	8.08		7.80	7.68	7.45	7.22	7.16	7.65	7.74		8.42	7.85	7.27
H1 lead leg		strides		14	15	14	14		15	15	16	16	16		135				
Nakamashi, Haruki (JPN) (20		time	6.07	10.04	14.28	18.60	22.97		27.43	31.92	36.50	41.42	46.36		51.70	4 / 2			
reaction time	0.145	interval		3.97	4.24	4.32	4.37		4.46	4.49	4.58	4.92	4.94	5.34			12.53	13.32	14.44
		velocity	7.41	8.82	8.25	8.10	8.01		7.85	7.80	7.64	7.11	7.09	7.49	7.74		8.38	7.88	7.27
H1 lead leg		strides		15	15	15	15		15	15	15	17	17		139				
Tonoyama, Ryohei (JPN) (20		time	6.07	10.09	14.38	18.75	23.22		27.86	32.55	37.29	42.03	46.86		52.36	3 / 3			
reaction time	0.190	interval		4.02	4.29	4.37	4.47		4.64	4.69	4.74	4.74	4.83	5.50			12.68	13.80	14.31
		velocity	7.41	8.71	8.16	8.01	7.83		7.54	7.46	7.38	7.38	7.25	7.27	7.64		8.28	7.61	7.34
H1 lead leg		strides		15	15	15	15		15	15	15	15	15		135				
Morioka, Yuuki (JPN) (2003)		time	6.37	10.64	15.18	19.65	24.27		28.95	33.65	38.41	43.16	47.95		53.10	7 / 4			
reaction time	0.154	interval		4.27	4.54	4.47	4.62		4.68	4.70	4.76	4.75	4.79	5.15			13.28	14.00	14.30
		velocity	7.06	8.20	7.71	7.83	7.58		7.48	7.45	7.35	7.37	7.31	7.77	7.53		7.91	7.50	7.34
H1 lead leg		strides		14	15	14	15		15	15	15	15	15		133				
Oda, Atuya (JPN) (2003)		time	6.26	10.39	14.76	19.20	23.77		28.48	33.25	38.19	43.13	48.01		53.18	5 / 5			
reaction time	0.173	interval		4.13	4.37	4.44	4.57		4.71	4.77	4.94	4.94	4.88	5.17			12.94	14.05	14.76
		velocity	7.19	8.47	8.01	7.88	7.66		7.43	7.34	7.09	7.09	7.17	7.74	7.52		8.11	7.47	7.11
H1 lead leg		strides		15	15	15	15		15	15	15	15	15		135				
Ogawa, Daiki (JPN) (2003)		time	6.29	10.51	14.88	19.30	23.86		28.53	33.23	38.04	42.98	47.96		53.22	2 / 6			
reaction time	0.154	interval		4.22	4.37	4.42	4.56		4.67	4.70	4.81	4.94	4.98	5.26			13.01	13.93	14.73
		velocity	7.15	8.29	8.01	7.92	7.68		7.49	7.45	7.28	7.09	7.03	7.60	7.52		8.07	7.54	7.13
H1 lead leg		strides		14	14	15	15		15	15	15	17	17		137				
Machida, Reo (JPN) (2003)		time	6.57	10.79	15.32	19.82	24.41		28.98	33.62	38.41	43.34	48.25		53.54	8 / 7			
reaction time	0.202	interval		4.22	4.53	4.50	4.59		4.57	4.64	4.79	4.93	4.91	5.29			13.25	13.80	14.63
		velocity	6.85	8.29	7.73	7.78	7.63		7.66	7.54	7.31	7.10	7.13	7.56	7.47		7.92	7.61	7.18
H1 lead leg		strides		15	15	15	15		15	15	15	17	17		139				
Harada, Hibiki (JPN) (2003)		time	6.19	10.08	14.32	18.84	23.36		28.01	32.83	37.74	42.91	48.06		53.82	1 / 8			
reaction time	0.162	interval		3.89	4.24	4.52	4.52		4.65	4.82	4.91	5.17	5.15	5.76			12.65	13.99	15.23
		velocity	7.27	9.00	8.25	7.74	7.74		7.53	7.26	7.13	6.77	6.80	6.94	7.43		8.30	7.51	6.89

H1 lead leg		strides		14	14	15	15		15	15	15	16	16		135			

2021 Herculis Meeting International d'Athletisme (Monaco, MON) (TV Analysis)

FINAL date 09-Jul-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.62	9.12	12.74	16.51	20.38	22.0	24.36	28.49	32.74	37.17	41.87		47.08	7 / 1			
reaction time	0.150	interval		3.50	3.62	3.77	3.87		3.98	4.13	4.25	4.43	4.70	5.21			10.89	11.98	13.38
		velocity	8.01	10.00	9.67	9.28	9.04	9.09	8.79	8.47	8.24	7.90	7.45	7.68	8.50		9.64	8.76	7.85
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
dos Santos, Alison (BRA) (2		time	5.70	9.31		16.76	20.64	22.4	24.74	28.93	33.16	37.60	42.31		47.51	6 / 2			
reaction time	0.177	interval		3.61		7.45	3.88		4.10	4.19	4.23	4.44	4.71	5.20			11.06	12.17	13.38
		velocity	7.89	9.70		9.40	9.02	8.93	8.54	8.35	8.27	7.88	7.43	7.69	8.42		9.49	8.63	7.85
H1 lead leg	L	strides	20	13	13		12		13	14		15	15	16.5	131.5				
Mägi, Rasmus (EST) (1992)		time	5.92	9.64		17.30	21.25	23.0	25.39	29.64	34.10	38.70	43.41		48.83	5 / 3			
reaction time	0.152	interval		3.72		7.66	3.95		4.14	4.25	4.46	4.60	4.71	5.42			11.38	12.34	13.77
		velocity	7.60	9.41		9.14	8.86	8.70	8.45	8.24	7.85	7.61	7.43	7.38	8.19		9.23	8.51	7.63
H1 lead leg	R	strides	20	13			13		13	13	14	14	14		114				
Preis, Constantin (GER) (19		time	6.00	9.84		17.60	21.62	23.4	25.79	30.08	34.50	39.20	44.04		49.49	4 / 4			
reaction time	0.231	interval		3.84		7.76	4.02		4.17	4.29	4.42	4.70	4.84	5.45			11.60	12.48	13.96
		velocity	7.50	9.11		9.02	8.71	8.55	8.39	8.16	7.92	7.45	7.23	7.34	8.08		9.05	8.41	7.52
H1 lead leg	L	strides	22	14			14		15	15		16	16		112				
Happio, Wilfried (FRA) (1998		time	5.84	9.54		17.32	21.37	23.1	25.52	30.05	34.60	39.34	44.17		49.66	3 / 5			
reaction time	0.123	interval		3.70		7.78	4.05		4.15	4.53	4.55	4.74	4.83	5.49			11.48	12.73	14.12
		velocity	7.71	9.46		9.00	8.64	8.66	8.43	7.73	7.69	7.38	7.25	7.29	8.05		9.15	8.25	7.44
H1 lead leg	L	strides	20	13			13		13	14		15	15		103				
McAlister, Chris (GBR) (1995		time	5.97	9.77		17.65		23.5			34.77	39.60	44.57		49.98	2 / 6			
reaction time	0.144	interval		3.80		7.88					17.12	4.83	4.97	5.41			11.68		
		velocity	7.54	9.21		8.88		8.51			8.18	7.25	7.04	7.39	8.00		8.99		
H1 lead leg	R	strides	22	14								16	16		68				
Bailey, Aldrich (USA) (1994)		time	5.94	9.64	13.44	17.31	21.33	23.4	25.52	29.96	34.40				dnf	8 / --			
reaction time	0.225	interval		3.70	3.80	3.87	4.02		4.19	4.44	4.44						11.37	12.65	
		velocity	7.58	9.46	9.21	9.04	8.71	8.55	8.35	7.88	7.88						9.23	8.30	
H1 lead leg	L	strides	21	13	13	13	13		13	14	14				114				

2021 Bauhaus Galan (Stockholm, SWE) (TV Analysis)

FINAL date 04-Jul-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison (BRA) (2		time	5.74	9.40	13.16	16.86	20.70	22.5	24.76	28.80	32.94	37.30	41.92		47.34	7 / 1			
reaction time	0.160	interval		3.66	3.76	3.70	3.84		4.06	4.04	4.14	4.36	4.62	5.42	**AR PB**		11.12	11.94	13.12
		velocity	7.84	9.56	9.31	9.46	9.11	8.89	8.62	8.66	8.45	8.03	7.58	7.38	8.45		9.44	8.79	8.00
H1 lead leg	L	strides		13	13	12	12		13	13	13	13	13	17	132				
Copello, Yasmani (TUR) (198		time	5.76	9.48	13.36	17.24	21.20	22.9	25.20	29.52	33.88	38.36	42.88		48.19	4 / 2			
reaction time	0.167	interval		3.72	3.88	3.88	3.96		4.00	4.32	4.36	4.48	4.52	5.31			11.48	12.28	13.36
		velocity	7.81	9.41	9.02	9.02	8.84	8.73	8.75	8.10	8.03	7.81	7.74	7.53	8.30		9.15	8.55	7.86
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17.7	158.7				
Mowatt, Kemat (JAM) (1995)		time	5.72	9.36	13.08	16.92	20.92	22.7	24.92	29.20	33.68	38.32	43.12		48.75	8 / 3			
reaction time	0.156	interval		3.64	3.72	3.84	4.00		4.00	4.28	4.48	4.64	4.80	5.63			11.20	12.28	13.92
		velocity	7.87	9.62	9.41	9.11	8.75	8.81	8.75	8.18	7.81	7.54	7.29	7.10	8.21		9.38	8.55	7.54
H1 lead leg	L	strides		13	13	13	13		13	14	14	14	14	17.7	138.7				
Mägi, Rasmus (EST) (1992)		time	5.88	9.68	13.44	17.32	21.32	23.1	25.44	29.76	34.24	38.76	43.36		48.81	5 / 4			
reaction time	0.128	interval		3.80	3.76	3.88	4.00		4.12	4.32	4.48	4.52	4.60	5.45			11.44	12.44	13.60
		velocity	7.65	9.21	9.31	9.02	8.75	8.66	8.50	8.10	7.81	7.74	7.61	7.34	8.20		9.18	8.44	7.72
H1 lead leg	R	strides		13	13	13	13		13	13	14	14	14	17.2	137.2				
McAlister, Chris (GBR) (1995		time	6.04	9.88	13.84	17.80	21.80	23.6	25.88		34.72	39.36	43.92		49.16	1 / 5			
reaction time	0.134	interval		3.84	3.96	3.96	4.00		4.08		8.84	4.64	4.56	5.24	**PB**		11.76		
		velocity	7.45	9.11	8.84	8.84	8.75	8.47	8.58		7.92	7.54	7.68	7.63	8.14		8.93		
H1 lead leg	R	strides		14	14	14	14		14			15	15	18.5	118.5				
Happio, Wilfried (FRA) (1998		time	5.80	9.56	13.40	17.24	21.20	23.0	25.28		34.04	38.88	43.64		49.28	2 / 6			
reaction time	0.136	interval		3.76	3.84	3.84	3.96		4.08		8.76	4.84	4.76	5.64			11.44		
		velocity	7.76	9.31	9.11	9.11	8.84	8.70	8.58		7.99	7.23	7.35	7.09	8.12		9.18		
H1 lead leg	L	strides	20	13	13	13	13		13	13		15	15	18	146				
Lattin, Amere (USA) (1997)		time	5.72	9.44	13.24	17.20	21.28	23.1	25.64		34.64	39.36	44.20		49.87	3 / 7			
reaction time	0.140	interval		3.72	3.80	3.96	4.08		4.36		9.00	4.72	4.84	5.67			11.48		
		velocity	7.87	9.41	9.21	8.84	8.58	8.66	8.03		7.78	7.42	7.23	7.05	8.02		9.15		
H1 lead leg	L	strides	20	13	13	13	13		14			15	15	17	133				
McMaster, Kyron (IVB) (1997		time	5.60	9.08	12.76	16.52	20.36	22.1	24.32	28.44	32.80	37.68	42.84		dnf	6 / --			

reaction time	0.177	interval		3.48	3.68	3.76	3.84		3.96	4.12	4.36	4.88	5.16				10.92	11.92	14.40
		velocity	8.04	10.06	9.51	9.31	9.11	9.05	8.84	8.50	8.03	7.17	6.78				9.62	8.81	7.29
H1 lead leg	L	strides		13	13	13	13		13	13	14	15	15		122				

2021 Bislett Games (Oslo, NOR) (TV Analysis)

FINAL date 01-Jul-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.58	9.10	12.70	16.34	20.16		24.08	28.18	32.38	36.78	41.44		46.70	7 / 1			
reaction time	0.163	interval		3.52	3.60	3.64	3.82		3.92	4.10	4.20	4.40	4.66	5.26	**WR**		10.76	11.84	13.26
		velocity	8.06	9.94	9.72	9.62	9.16		8.93	8.54	8.33	7.95	7.51	7.60	8.57		9.76	8.87	7.92
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	13	18	155				
dos Santos, Alison (BRA) (2		time	5.74	9.36	13.12	16.92	20.78		24.86	28.98	33.20	37.56	42.06		47.38	6 / 2			
reaction time	0.179	interval		3.62	3.76	3.80	3.86		4.08	4.12	4.22	4.36	4.50	5.32	**AR PB**		11.18	12.06	13.08
		velocity	7.84	9.67	9.31	9.21	9.07		8.58	8.50	8.29	8.03	7.78	7.52	8.44		9.39	8.71	8.03
H1 lead leg	L	strides	20	13	13	12	12		13	13		13	13	16.5	138.5				
Copello, Yasmani (TUR) (198		time	5.82	9.50	13.26	17.14	21.06		25.14		33.56	38.46	43.26		48.86	5 / 3			
reaction time	0.198	interval		3.68	3.76	3.88	3.92		4.08		8.42	4.90	4.80	5.60			11.32		
		velocity	7.73	9.51	9.31	9.02	8.93		8.58		8.31	7.14	7.29	7.14	8.19		9.28		
H1 lead leg	R	strides	20	13	13		13		13	13		14	15		114				
Mägi, Rasmus (EST) (1992)		time	5.90	9.68	13.44	17.30	21.20		25.28		33.98	38.58	43.34		48.95	3 / 4			
reaction time	0.161	interval		3.78	3.76	3.86	3.90		4.08		8.70	4.60	4.76	5.61			11.40		
		velocity	7.63	9.26	9.31	9.07	8.97		8.58		8.05	7.61	7.35	7.13	8.17		9.21		
H1 lead leg	R	strides	20	13	13		13		13	13		14	14		113				
Preis, Constantin (GER) (19		time	6.00	9.82	13.66	17.70	21.72		25.88		34.72	39.48	44.38		49.79	2 / 5			
reaction time	0.246	interval		3.82	3.84	4.04	4.02		4.16		8.84	4.76	4.90	5.41			11.70		
		velocity	7.50	9.16	9.11	8.66	8.71		8.41		7.92	7.35	7.14	7.39	8.03		8.97		
H1 lead leg	L	strides	22	14	14		14		15			16	16		111				
Angela, Ramsey (NED) (1999		time	6.08	9.96		18.02	22.16		26.44		35.26	39.90	44.54		49.81	1 / 6			
reaction time	0.199	interval		3.88		8.06	4.14		4.28		8.82	4.64	4.64	5.27			11.94		
		velocity	7.40	9.02		8.68	8.45		8.18		7.94	7.54	7.54	7.59	8.03		8.79		
H1 lead leg	R	strides	22	14					15			15	15		81				
Vaillant, Ludvy (FRA) (1995)		time	5.96	9.66	13.44	17.40	21.46		25.68		34.62				dnf	8 / --			
reaction time	0.245	interval		3.70	3.78	3.96	4.06		4.22		8.94						11.44		
		velocity	7.55	9.46	9.26	8.84	8.62		8.29		7.83						9.18		
H1 lead leg	R	strides	21	13	13	13	13		13						86				
Barr, Thomas (IRL) (1992)		time	5.98	9.78											dnf	4 / --			
reaction time	0.147	interval		3.80															
		velocity	7.53	9.21															
H1 lead leg	R	strides	21	14											35				

2021 Chinese National Championships (Chongqing, CHN)

FINAL date 26-Jun-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shang Shuo (CHN) (1995)		time	6.46	10.53	14.63	18.83	23.08		27.47	31.82	36.28	40.82	45.38		50.38	5 / 1			
reaction time	0.212	interval		4.07	4.10	4.20	4.25		4.39	4.35	4.46	4.54	4.56	5.00			12.37	12.99	13.56
		velocity	6.97	8.60	8.54	8.33	8.24		7.97	8.05	7.85	7.71	7.68	8.00	7.94		8.49	8.08	7.74
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Xie Zhiyu (CHN) (2000)		time	6.15	10.04	14.04	18.07	22.24		26.63	31.25	35.92	40.64	45.34		50.4	3 / ~~2~~	*(no official time given)*		
reaction time	0.227	interval		3.89	4.00	4.03	4.17		4.39	4.62	4.67	4.72	4.70	5.06	**DQ**		11.92	13.18	14.09
		velocity	7.32	9.00	8.75	8.68	8.39		7.97	7.58	7.49	7.42	7.45	7.91	7.94		8.81	7.97	7.45
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17	159				
Song Jiahui (CHN) (2002)		time	6.31	10.33	14.44	18.66	22.91		27.23	31.61	36.23	40.99	45.82		51.32	7 / ~~3~~ 2			
reaction time	0.191	interval		4.02	4.11	4.22	4.25		4.32	4.38	4.62	4.76	4.83	5.50	**PB**		12.35	12.95	14.21
		velocity	7.13	8.71	8.52	8.29	8.24		8.10	7.99	7.58	7.35	7.25	7.27	7.79		8.50	8.11	7.39
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	15	18	159				
Li Guangzhen (CHN) (1995)		time	6.40	10.51	14.65	18.83	23.24		27.86	32.51	37.27	42.01	46.66		51.72	4 / ~~4~~ 3			
reaction time	0.218	interval		4.11	4.14	4.18	4.41		4.62	4.65	4.76	4.74	4.65	5.06			12.43	13.68	14.15
		velocity	7.03	8.52	8.45	8.37	7.94		7.58	7.53	7.35	7.38	7.53	7.91	7.73		8.45	7.68	7.42
H1 lead leg	R	strides	21	14	14	14	14		15	15	15	15	15	17.2	169.2				
Lu Shengjing (CHN) (1998)		time	6.24	10.29	14.55	18.88	23.37		27.91	32.45	37.02	41.71	46.48		51.78	1 / ~~5~~ 4			
reaction time	0.187	interval		4.05	4.26	4.33	4.49		4.54	4.54	4.57	4.69	4.77	5.30			12.64	13.57	14.03
		velocity	7.21	8.64	8.22	8.08	7.80		7.71	7.71	7.66	7.46	7.34	7.55	7.72		8.31	7.74	7.48
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Wang Guozhong (CHN) (19		time	6.25	10.35	14.56	18.87	23.30		27.78	32.35	37.04	41.84	46.87		52.51	8 / ~~6~~ 5			
reaction time	0.217	interval		4.10	4.21	4.31	4.43		4.48	4.57	4.69	4.80	5.03	5.64			12.62	13.48	14.52
		velocity	7.20	8.54	8.31	8.12	7.90		7.81	7.66	7.46	7.29	6.96	7.09	7.62		8.32	7.79	7.23
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	17.5	173.5				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Wang Siqing (CHN) (1999)		time	6.40	10.54	14.78	19.07	23.51	28.03	32.56	37.22	42.09	47.11		52.84	2 / ~~7~~ 6			
reaction time	0.214	interval		4.14	4.24	4.29	4.44	4.52	4.53	4.66	4.87	5.02	5.73			12.67	13.49	14.55
		velocity	7.03	8.45	8.25	8.16	7.88	7.74	7.73	7.51	7.19	6.97	6.98	7.57		8.29	7.78	7.22
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	16	16	19	178				

Heat 4

date 26-Jun-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Guangzhen (CHN) (1995)		time	6.16	10.11	14.26	18.57	23.07		27.68	32.25	36.89	41.57	46.16		51.33	5 / 1			
reaction time	0.183	interval		3.95	4.15	4.31	4.50		4.61	4.57	4.64	4.68	4.59	5.17			12.41	13.68	13.91
		velocity	7.31	8.86	8.43	8.12	7.78		7.59	7.66	7.54	7.48	7.63	7.74	7.79		8.46	7.68	7.55
H1 lead leg	L	strides	22	14	14	14	14		15	15	14	15	15	17.2	169.2				
Lu Shengjing (CHN) (1998)		time	6.34	10.37	14.62	18.98	23.39		27.73	32.12	36.60	41.25	46.03		51.54	8 / 2			
reaction time	0.228	interval		4.03	4.25	4.36	4.41		4.34	4.39	4.48	4.65	4.78	5.51	=PB		12.64	13.14	13.91
		velocity	7.10	8.68	8.24	8.03	7.94		8.06	7.97	7.81	7.53	7.32	7.26	7.76		8.31	7.99	7.55
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Cai Junqi (CHN) (1996)		time	6.32	10.31	14.38	18.59	22.94		27.39	31.85	36.37	40.99	45.73		51.60	3 / 3			
reaction time	0.229	interval		3.99	4.07	4.21	4.35		4.45	4.46	4.52	4.62	4.74	5.87			12.27	13.26	13.88
		velocity	7.12	8.77	8.60	8.31	8.05		7.87	7.85	7.74	7.58	7.38	6.81	7.75		8.56	7.92	7.56
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Song Haotian (CHN) (1999)		time	6.31	10.37	14.43	18.67	23.12		27.73	32.34	37.18	42.05	47.12		52.72	7 / 4			
reaction time	0.209	interval		4.06	4.06	4.24	4.45		4.61	4.61	4.84	4.87	5.07	5.60			12.36	13.67	14.78
		velocity	7.13	8.62	8.62	8.25	7.87		7.59	7.59	7.23	7.19	6.90	7.14	7.59		8.50	7.68	7.10
H1 lead leg	L	strides	22	14	14	14	15		15	15	15	15	16	19	174				
Zhuang Linfei (CHN) (1996)		time	6.24	10.23	14.33	18.59	22.97		27.61	32.34	37.27	42.46	47.98		54.37	4 / 5			
reaction time	0.183	interval		3.99	4.10	4.26	4.38		4.64	4.73	4.93	5.19	5.52	6.39			12.35	13.75	15.64
		velocity	7.21	8.77	8.54	8.22	7.99		7.54	7.40	7.10	6.74	6.34	6.26	7.36		8.50	7.64	6.71
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	17	20	174				
Wang Yijie (CHN) (1997)		time	6.48	11.11	15.79	20.77	25.86			36.19					59.46	6 / 6			
reaction time	0.162	interval		4.63	4.68	4.98	5.09			10.33							14.29	15.42	
		velocity	6.94	7.56	7.48	7.03	6.88			6.78					6.73		7.35	6.81	
H1 lead leg	L	strides	24	17	17	17	17								92				

Heat 3

date 26-Jun-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Song Jiahui (CHN) (2002)		time	6.36	10.36	14.45	18.62	22.83		27.10	31.68	36.26	41.01	45.87		51.44	8 / 1			
reaction time	0.234	interval		4.00	4.09	4.17	4.21		4.27	4.58	4.58	4.75	4.86	5.57	PB		12.26	13.06	14.19
		velocity	7.08	8.75	8.56	8.39	8.31		8.20	7.64	7.64	7.37	7.20	7.18	7.78		8.56	8.04	7.40
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15	18.5	161.5				
Wang Siqing (CHN) (1999)		time	6.30	10.35	14.46	18.65	22.97		27.33	31.78	36.31	41.03	45.87		51.44	7 / 2			
reaction time	0.222	interval		4.05	4.11	4.19	4.32		4.36	4.45	4.53	4.72	4.84	5.57	PB		12.35	13.13	14.09
		velocity	7.14	8.64	8.52	8.35	8.10		8.03	7.87	7.73	7.42	7.23	7.18	7.78		8.50	8.00	7.45
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	16	16	19.5	178.5				
Wang Hongwen (CHN) (200		time	6.27	10.25	14.26	18.40	22.61		27.03	31.49	36.15	40.99	45.97		51.56	6 / 3			
reaction time	0.242	interval		3.98	4.01	4.14	4.21		4.42	4.46	4.66	4.84	4.98	5.59			12.13	13.09	14.48
		velocity	7.18	8.79	8.73	8.45	8.31		7.92	7.85	7.51	7.23	7.03	7.16	7.76		8.66	8.02	7.25
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18	168				
Gong Debin (CHN) (1997)		time	6.11	10.08	14.10	18.42	22.79		27.33	32.02	36.84	41.74	46.58		52.00	4 / 4			
reaction time	0.271	interval		3.97	4.02	4.32	4.37		4.54	4.69	4.82	4.90	4.84	5.42			12.31	13.60	14.56
		velocity	7.36	8.82	8.71	8.10	8.01		7.71	7.46	7.26	7.14	7.23	7.38	7.69		8.53	7.72	7.21
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.5	170.5				
Cui Caizhuang (CHN) (1995)		time	6.38	10.49	14.65	19.00	23.39		27.91	32.51	37.29	42.16	47.11		52.73	5 / 5			
reaction time	0.171	interval		4.11	4.16	4.35	4.39		4.52	4.60	4.78	4.87	4.95	5.62			12.62	13.51	14.60
		velocity	7.05	8.52	8.41	8.05	7.97		7.74	7.61	7.32	7.19	7.07	7.12	7.59		8.32	7.77	7.19
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15	18	170				
Liu Yangyang (CHN) (1995)		time	6.42	10.59	14.85	19.22	23.81		28.40	33.17	37.82	42.63	47.50		52.90	3 / 6			
reaction time	0.222	interval		4.17	4.26	4.37	4.59		4.59	4.77	4.65	4.81	4.87	5.40			12.80	13.95	14.33
		velocity	7.01	8.39	8.22	8.01	7.63		7.63	7.34	7.53	7.28	7.19	7.41	7.56		8.20	7.53	7.33
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				

Heat 2

date 26-Jun-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Wang Daojun (CHN) (2000)		time	6.18	10.21	14.31	18.57	22.91		27.41	32.05	36.67	41.34	46.06		51.42	5 / 1			
reaction time	0.201	interval		4.03	4.10	4.26	4.34		4.50	4.64	4.62	4.67	4.72	5.36			12.39	13.48	14.01
		velocity	7.28	8.68	8.54	8.22	8.06		7.78	7.54	7.58	7.49	7.42	7.46	7.78		8.47	7.79	7.49
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18	170				
Lin Zhikai (CHN) (2001)		time	6.23	10.23	14.27	18.43	22.70		27.11	31.63	36.29	41.09	46.05		51.70	6 / 2			
reaction time	0.187	interval		4.00	4.04	4.16	4.27		4.41	4.52	4.66	4.80	4.96	5.65			12.20	13.20	14.42

		velocity	7.22	8.75	8.66	8.41	8.20	7.94	7.74	7.51	7.29	7.06	7.08	7.74		8.61	7.95	7.28
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	15	18.2	175.2				
Feng Zhiqiang (CHN) (1998)		time	6.29	10.22	14.23	18.38	22.72	27.21	32.05	36.80	41.62	46.48		52.24	3 / 3			
reaction time	0.268	interval		3.93	4.01	4.15	4.34	4.49	4.84	4.75	4.82	4.86	5.76			12.09	13.67	14.43
		velocity	7.15	8.91	8.73	8.43	8.06	7.80	7.23	7.37	7.26	7.20	6.94	7.66		8.68	7.68	7.28
H1 lead leg	L	strides	21	13	13	13	13	13	14	14	15	15	18	162				
Zheng Pan (CHN) (2001)		time	6.38	10.34	14.33	18.38	22.61	27.11	31.73	36.48	41.49	46.59		52.36	7 / 4			
reaction time	0.203	interval		3.96	3.99	4.05	4.23	4.50	4.62	4.75	5.01	5.10	5.77			12.00	13.35	14.86
		velocity	7.05	8.84	8.77	8.64	8.27	7.78	7.58	7.37	6.99	6.86	6.93	7.64		8.75	7.87	7.07
H1 lead leg	L	strides	22	14	14	14	14	15	15	15	16	16	19	174				
Bai Jiarui (CHN) (1995)		time	6.63	10.87	15.15	19.53	24.00	28.74	33.65	38.52				54.19	8 / 5			
reaction time	0.299	interval		4.24	4.28	4.38	4.47	4.74	4.91	4.87						12.90	14.12	
		velocity	6.79	8.25	8.18	7.99	7.83	7.38	7.13	7.19				7.38		8.14	7.44	
H1 lead leg	L	strides	22	14	14	14	14	14	14	15				121				
Yang Baichuan (CHN) (1995)		time	6.25	10.19	14.33	18.50	22.70	27.09	31.61	36.27	41.11	46.34	fell		4 / --			
reaction time	0.176	interval		3.94	4.14	4.17	4.20	4.39	4.52	4.66	4.84	5.23		DQ		12.25	13.11	14.73
		velocity	7.20	8.88	8.45	8.39	8.33	7.97	7.74	7.51	7.23	6.69				8.57	8.01	7.13
H1 lead leg	L	strides	23	15	15	15	15	15	15	15	15	17		160				

Heat 1

date 26-Jun-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Xie Zhiyu (CHN) (2000)		time	6.22	10.03	13.88	17.78	21.79		25.98	30.45	34.94	39.54	44.21		49.40	3 / 1			
reaction time	0.239	interval		3.81	3.85	3.90	4.01		4.19	4.47	4.49	4.60	4.67	5.19	PB		11.56	12.67	13.76
		velocity	7.23	9.19	9.09	8.97	8.73		8.35	7.83	7.80	7.61	7.49	7.71	8.10		9.08	8.29	7.63
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.2	159.2				
Shang Shuo (CHN) (1995)		time	6.42	10.65	14.88	19.19	23.54		28.02	32.51	37.07	41.66	46.27		51.31	6 / 2			
reaction time	0.236	interval		4.23	4.23	4.31	4.35		4.48	4.49	4.56	4.59	4.61	5.04			12.77	13.32	13.76
		velocity	7.01	8.27	8.27	8.12	8.05		7.81	7.80	7.68	7.63	7.59	7.94	7.80		8.22	7.88	7.63
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Wang Guozhong (CHN) (19		time	6.10	10.11	14.26	18.52	22.90		27.37	31.96	36.58	41.28	46.05		51.43	7 / 3			
reaction time	0.152	interval		4.01	4.15	4.26	4.38		4.47	4.59	4.62	4.70	4.77	5.38			12.42	13.44	14.09
		velocity	7.38	8.73	8.43	8.22	7.99		7.83	7.63	7.58	7.45	7.34	7.43	7.78		8.45	7.81	7.45
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	18.5	174.5				
Ye Anan (CHN) (2004)		time	6.37	10.44	14.64	18.83	23.19		27.69	32.22	36.91	41.57	46.24		51.64	5 / 4			
reaction time	0.272	interval		4.07	4.20	4.19	4.36		4.50	4.53	4.69	4.66	4.67	5.40			12.46	13.39	14.02
		velocity	7.06	8.60	8.33	8.35	8.03		7.78	7.73	7.46	7.51	7.49	7.41	7.75		8.43	7.84	7.49
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18.2	169.2				
Long Wei (CHN) (1997)		time	6.13	10.08	14.10	18.20	22.47		26.92	31.51	36.18	41.06	46.24		52.33	8 / 5			
reaction time	0.227	interval		3.95	4.02	4.10	4.27		4.45	4.59	4.67	4.88	5.18	6.09			12.07	13.31	14.73
		velocity	7.34	8.86	8.71	8.54	8.20		7.87	7.63	7.49	7.17	6.76	6.57	7.64		8.70	7.89	7.13
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	19	175				
Li Guancheng (CHN) (2002)		time	6.22	10.43	14.81	19.28	23.96		28.56	33.68	39.41				58.41	2 / 6			
reaction time	0.211	interval		4.21	4.38	4.47	4.68		4.60	5.12	5.73						13.06	14.40	
		velocity	7.23	8.31	7.99	7.83	7.48		7.62	6.83	6.11				6.85		8.04	7.29	
H1 lead leg	L	strides	21	14	14	14	14		14	16					107				

2021 Japanese National Championships (Osaka, JPN)

FINAL

date 26-Jun-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kurokawa, Kazuki (JPN) (20		time	5.83	9.43	13.10	16.87	20.79		24.94	29.21	33.61	38.26	43.10		48.69	7 / 1			
reaction time	0.202	interval		3.60	3.67	3.77	3.92		4.15	4.27	4.40	4.65	4.84	5.59			11.04	12.34	13.89
		velocity	7.72	9.72	9.54	9.28	8.93		8.43	8.20	7.95	7.53	7.23	7.16	8.22		9.51	8.51	7.56
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Abe, Takatoshi (JPN) (1991)		time	5.93	9.57	13.36	17.15	21.02		25.04	29.33	33.77	38.40	43.21		48.87	5 / 2			
reaction time	0.173	interval		3.64	3.79	3.79	3.87		4.02	4.29	4.44	4.63	4.81	5.66			11.22	12.18	13.88
		velocity	7.59	9.62	9.23	9.23	9.04		8.71	8.16	7.88	7.56	7.28	7.07	8.18		9.36	8.62	7.56
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Kishimoto, Takayuki (JPN) (		time	5.92	9.71	13.61	17.63	21.72		25.93	30.23	34.70	39.20	43.88		49.29	8 / 3			
reaction time	0.156	interval		3.79	3.90	4.02	4.09		4.21	4.30	4.47	4.50	4.68	5.41			11.71	12.60	13.65
		velocity	7.60	9.23	8.97	8.71	8.56		8.31	8.14	7.83	7.78	7.48	7.39	8.12		8.97	8.33	7.69
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18	164				
Yamauchi, Hiromu (JPN) (19		time	6.09	10.01	13.95	17.93	21.97		26.08	30.28	34.67	39.24	43.96		49.48	6 / 4			
reaction time	0.217	interval		3.92	3.94	3.98	4.04		4.11	4.20	4.39	4.57	4.72	5.52			11.84	12.35	13.68
		velocity	7.39	8.93	8.88	8.79	8.66		8.52	8.33	7.97	7.66	7.42	7.25	8.08		8.87	8.50	7.68
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	19	169				
Toyoda, Masaki (JPN) (1998)		time	6.01	9.81	13.63	17.60	21.60		25.73	29.96	34.48	39.17	44.11		49.89	4 / 5			

reaction time	0.227	interval		3.80	3.82	3.97	4.00	4.13	4.23	4.52	4.69	4.94	5.78			11.59	12.36	14.15
		velocity	7.49	9.21	9.16	8.82	8.75	8.47	8.27	7.74	7.46	7.09	6.92	8.02		9.06	8.50	7.42
H1 lead leg	L	strides	21	14	14	14	14	14	14	15	15	16	19	170				
Tsutsue, Kaito (JPN) (1998)		time	6.04	9.84	13.73	17.68	21.81	26.11	30.41	35.00	39.77	44.83		50.69	2 / 6			
reaction time	0.195	interval		3.80	3.89	3.95	4.13	4.30	4.30	4.59	4.77	5.06	5.86			11.64	12.73	14.42
		velocity	7.45	9.21	9.00	8.86	8.47	8.14	8.14	7.63	7.34	6.92	6.83	7.89		9.02	8.25	7.28
H1 lead leg	R	strides	23	13	13	13	14	14	14	15	15	15	19	168				
Kawagoe, Hiroya (JPN) (1997		time	6.06	9.93	13.96	18.05	22.26	26.64	31.16	35.82	40.57	45.40		50.71	3 / 7			
reaction time	0.191	interval		3.87	4.03	4.09	4.21	4.38	4.52	4.66	4.75	4.83	5.31			11.99	13.11	14.24
		velocity	7.43	9.04	8.68	8.56	8.31	7.99	7.74	7.51	7.37	7.25	7.53	7.89		8.76	8.01	7.37
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15		152				
Yamamoto, Tatsuhiro (JPN)		time	5.97	9.68	13.41	17.25	21.25	25.48	29.90	34.42	39.17	44.39		51.32	9 / 8			
reaction time	0.164	interval		3.71	3.73	3.84	4.00	4.23	4.42	4.52	4.75	5.22	6.93			11.28	12.65	14.49
		velocity	7.54	9.43	9.38	9.11	8.75	8.27	7.92	7.74	7.37	6.70	5.77	7.79		9.31	8.30	7.25
H1 lead leg	R	strides	21	14	14	14	14	14	15	15	15	15	19.7	170.7				

2021 Japanese U20 National Championships (Osaka, JPN)

FINAL date 26-Jun-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Omura, Haruki (JPN) (2002)		time	6.29	10.18	14.15	18.18	22.39		26.68	31.08	35.62	40.24	44.93		50.27	5 / 1			
reaction time	0.214	interval		3.89	3.97	4.03	4.21		4.29	4.40	4.54	4.62	4.69	5.34	PB		11.89	12.90	13.85
		velocity	7.15	9.00	8.82	8.68	8.31		8.16	7.95	7.71	7.58	7.46	7.49	7.96		8.83	8.14	7.58
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Nakashima, Haruki (JPN) (20		time	6.17	10.16	14.18	18.30	22.48		26.78	31.16	35.62	40.34	45.08		50.53	7 / 2			
reaction time	0.181	interval		3.99	4.02	4.12	4.18		4.30	4.38	4.46	4.72	4.74	5.45	PB		12.13	12.86	13.92
		velocity	7.29	8.77	8.71	8.50	8.37		8.14	7.99	7.85	7.42	7.38	7.34	7.92		8.66	8.16	7.54
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	20.7	177.7				
Fukamachi, Hidai (JPN) (200		time	6.22	10.19	14.10	18.10	22.19		26.43	30.81	35.39	40.14	45.03		50.73	4 / 3			
reaction time	0.220	interval		3.97	3.91	4.00	4.09		4.24	4.38	4.58	4.75	4.89	5.70	PB		11.88	12.71	14.22
		velocity	7.23	8.82	8.95	8.75	8.56		8.25	7.99	7.64	7.37	7.16	7.02	7.88		8.84	8.26	7.38
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	16	16	19.5	173.5				
Kanno, Kohei (JPN) (2002)		time	6.46	10.51	14.60	18.67	22.84		27.08	31.38	35.77	40.37	45.31		50.88	9 / 4			
reaction time	0.200	interval		4.05	4.09	4.07	4.17		4.24	4.30	4.39	4.60	4.94	5.57			12.21	12.71	13.93
		velocity	6.97	8.64	8.56	8.60	8.39		8.25	8.14	7.97	7.61	7.09	7.18	7.86		8.60	8.26	7.54
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	17	19.5	178.5				
Naito, Genichiro (JPN) (2002		time	6.27	10.24	14.21	18.30	22.54		26.96	31.53	36.17	40.96	45.98		51.70	6 / 5			
reaction time	0.183	interval		3.97	3.97	4.09	4.24		4.42	4.57	4.64	4.79	5.02	5.72			12.03	13.23	14.45
		velocity	7.18	8.82	8.82	8.56	8.25		7.92	7.66	7.54	7.31	6.97	6.99	7.74		8.73	7.94	7.27
H1 lead leg	R	strides	21	14	14	14	14		15	15	15	15	15		152				
Suzuki, Taiga (JPN) (2002)		time	6.12	10.03	13.95	17.93	22.02		26.28	30.71	35.35	40.37	45.66		51.95	3 / 6			
reaction time	0.190	interval		3.91	3.92	3.98	4.09		4.26	4.43	4.64	5.02	5.29	6.29			11.81	12.78	14.95
		velocity	7.35	8.95	8.93	8.79	8.56		8.22	7.90	7.54	6.97	6.62	6.36	7.70		8.89	8.22	7.02
H1 lead leg	L	strides	21	14	14	14	15		15	15	15	16	16		155				
Tonoyama, Ryohei (JPN) (20		time	6.26	10.23	14.25	18.45	22.77		27.28	31.90	36.65	41.47	46.61		52.55	2 / 7			
reaction time	0.202	interval		3.97	4.02	4.20	4.32		4.51	4.62	4.75	4.82	5.14	5.94			12.19	13.45	14.71
		velocity	7.19	8.82	8.71	8.33	8.10		7.76	7.58	7.37	7.26	6.81	6.73	7.61		8.61	7.81	7.14
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	17		159				
Oda, Atuya (JPN) (2003)		time	6.31	10.26	14.23	18.28	22.57		27.08	31.72	36.55	41.57	46.91		52.76	8 / 8			
reaction time	0.166	interval		3.95	3.97	4.05	4.29		4.51	4.64	4.83	5.02	5.34	5.85			11.97	13.44	15.19
		velocity	7.13	8.86	8.82	8.64	8.16		7.76	7.54	7.25	6.97	6.55	6.84	7.58		8.77	7.81	6.91
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	17		159				

2020 USA Olympic Trials (Eugene, OR) (TV Analysis)

FINAL date 26-Jun-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.77	9.47	13.30	17.17	21.09		25.06	29.06	33.20	37.50	41.84		46.83	5 / 1			
reaction time	0.235	interval		3.70	3.83	3.87	3.92		3.97	4.00	4.14	4.30	4.34	4.99	PB		11.40	11.89	12.78
		velocity	7.80	9.46	9.14	9.04	8.93		8.82	8.75	8.45	8.14	8.06	8.02	8.54		9.21	8.83	8.22
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Selmon, Kenny (USA) (1996)		time	5.90	9.61	13.35	17.20	21.12		25.19	29.36	33.63	38.10	42.74		48.08	6 / 2			
reaction time	0.212	interval		3.71	3.74	3.85	3.92		4.07	4.17	4.27	4.47	4.64	5.34	PB		11.30	12.16	13.38
		velocity	7.63	9.43	9.36	9.09	8.93		8.60	8.39	8.20	7.83	7.54	7.49	8.32		9.29	8.63	7.85
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Kendziera, Dave (USA) (1994		time	5.80	9.57	13.41	17.38	21.38		25.52	29.73	34.16	38.57	43.06		48.38	4 / 3			
reaction time	0.172	interval		3.77	3.84	3.97	4.00		4.14	4.21	4.43	4.41	4.49	5.32	PB		11.58	12.35	13.33
		velocity	7.76	9.28	9.11	8.82	8.75		8.45	8.31	7.90	7.94	7.80	7.52	8.27		9.07	8.50	7.88
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	14	18.2	158.2				

Bailey, Aldrich (USA) (1994)		time	5.80	9.61	13.48	17.35	21.32	25.42	29.79	34.20	38.64	43.17		48.55	3 / 4			
reaction time	0.228	interval		3.81	3.87	3.87	3.97	4.10	4.37	4.41	4.44	4.53	5.38	PB		11.55	12.44	13.38
		velocity	7.76	9.19	9.04	9.04	8.82	8.54	8.01	7.94	7.88	7.73	7.43	8.24		9.09	8.44	7.85
H1 lead leg	L	strides		13	13	13	13		14	14	14	14	17.2	125.2				
Rosser, Khallifah (USA) (199		time	5.77	9.37	13.10	16.96	20.99	25.16	29.48	33.83	38.33	43.06		48.81	8 / 5			
reaction time	0.279	interval		3.60	3.73	3.86	4.03	4.17	4.32	4.35	4.50	4.73	5.75			11.19	12.52	13.58
		velocity	7.80	9.72	9.38	9.07	8.68	8.39	8.10	8.05	7.78	7.40	6.96	8.20		9.38	8.39	7.73
H1 lead leg	R	strides		13	13	13	13	14	14	14	14	15	18	141				
Levingston, Isaiah (USA) (19		time	5.80	9.61	13.51	17.65	21.95	26.29	30.66		39.40	43.94		49.25	9 / 6			
reaction time	0.231	interval		3.81	3.90	4.14	4.30	4.34	4.37		8.74	4.54	5.31			11.85	13.01	13.28
		velocity	7.76	9.19	8.97	8.45	8.14	8.06	8.01		8.01	7.71	7.53	8.12		8.86	8.07	7.91
H1 lead leg	L	strides		13	13	13	13	13	13	13		13		104				
Samuel, Cameron (USA) (19		time	5.84	9.67	13.48	17.45	21.59	25.82	30.26	34.78	39.34	43.91		49.27	7 / 7			
reaction time	0.199	interval		3.83	3.81	3.97	4.14	4.23	4.44	4.52	4.56	4.57	5.36			11.61	12.81	13.65
		velocity	7.71	9.14	9.19	8.82	8.45	8.27	7.88	7.74	7.68	7.66	7.46	8.12		9.04	8.20	7.69
H1 lead leg	R	strides		14	14	14	14	14	15	15		15		115				
Bassitt, Trevor (USA) (1998)		time	5.88	9.64	13.51	17.45	21.55	25.76	30.20	34.87	39.54	44.38		50.03	2 / 8			
reaction time	0.206	interval		3.76	3.87	3.94	4.10	4.21	4.44	4.67	4.67	4.84	5.65			11.57	12.75	14.18
		velocity	7.65	9.31	9.04	8.88	8.54	8.31	7.88	7.49	7.49	7.23	7.08	8.00		9.08	8.24	7.40
H1 lead leg	R	strides		13	13	13	13		14	14	14	14		108				

Semi-Final 2

date 25-Jun-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.80	9.46	13.20	17.02	20.98		25.02	29.25	33.56	38.04	43.01		48.61	6 / 1			
reaction time	0.197	interval		3.66	3.74	3.82	3.96		4.04	4.23	4.31	4.48	4.97	5.60			11.22	12.23	13.76
		velocity	7.76	9.56	9.36	9.16	8.84		8.66	8.27	8.12	7.81	7.04	7.14	8.23		9.36	8.59	7.63
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	14	17	155				
Samuel, Cameron (USA) (19		time	6.00	9.87	13.78	17.77	21.80		26.06	30.49	35.00	39.47	43.94		49.01	5 / 2			
reaction time	0.154	interval		3.87	3.91	3.99	4.03		4.26	4.43	4.51	4.47	4.47	5.07			11.77	12.72	13.45
		velocity	7.50	9.04	8.95	8.77	8.68		8.22	7.90	7.76	7.83	7.83	7.89	8.16		8.92	8.25	7.81
H1 lead leg	R	strides		14	14	14	14			15	15	15	15	18	134				
Kendziera, Dave (USA) (1994		time	6.00	9.82	13.70	17.58	21.55		25.72	30.10	34.56	39.10	43.91		49.05	8 / 3			
reaction time	0.190	interval		3.82	3.88	3.88	3.97		4.17	4.38	4.46	4.54	4.81	5.14			11.58	12.52	13.81
		velocity	7.50	9.16	9.02	9.02	8.82		8.39	7.99	7.85	7.71	7.28	7.78	8.15		9.07	8.39	7.60
H1 lead leg	R	strides		13	13	13	13		13	13	14	14	14	18	138				
Bailey, Aldrich (USA) (1994)		time	6.10	9.94	13.84	17.71	21.84		25.99	30.46	34.92	39.50	44.11		49.20	2 / 4			
reaction time	0.188	interval		3.84	3.90	3.87	4.13		4.15	4.47	4.46	4.58	4.61	5.09	PB		11.61	12.75	13.65
		velocity	7.38	9.11	8.97	9.04	8.47		8.43	7.83	7.85	7.64	7.59	7.86	8.13		9.04	8.24	7.69
H1 lead leg	L	strides		13	13	13	13			14	14	14	14	17	125				
Bassitt, Trevor (USA) (1998)		time	6.00	9.81	13.68	17.62	21.82		26.09	30.56	35.10	39.60	44.21		49.37	3 / 5			
reaction time	0.176	interval		3.81	3.87	3.94	4.20		4.27	4.47	4.54	4.50	4.61	5.16			11.62	12.94	13.65
		velocity	7.50	9.19	9.04	8.88	8.33		8.20	7.83	7.71	7.78	7.59	7.75	8.10		9.04	8.11	7.69
H1 lead leg	R	strides		13	13	13	13			13	14	13	14	17	123				
Harvey, Jonathan (USA) (199		time	5.93	9.67	13.54	17.55	21.69		26.16	30.63	35.23	39.77	44.34		49.53	7 / 6			
reaction time	0.140	interval		3.74	3.87	4.01	4.14		4.47	4.47	4.60	4.54	4.57	5.19	PB		11.62	13.08	13.71
		velocity	7.59	9.36	9.04	8.73	8.45		7.83	7.83	7.61	7.71	7.66	7.71	8.08		9.04	8.03	7.66
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	17.2	163.2				
Brockman, Charles (USA) (1		time	6.14	10.01	14.01	18.05	22.22		26.56	31.03	35.50	40.00	44.47		49.54	9 / 7			
reaction time	0.241	interval		3.87	4.00	4.04	4.17		4.34	4.47	4.47	4.50	4.47	5.07			11.91	12.98	13.44
		velocity	7.33	9.04	8.75	8.66	8.39		8.06	7.83	7.83	7.78	7.83	7.89	8.07		8.82	8.09	7.81
H1 lead leg	R	strides		14	14	14	14		15	15	15	15	15	18.7	149.7				
Spencer, William (USA) (200		time	6.03	9.81	13.64	17.62	21.79		26.19	30.76	35.40	40.07	44.81		50.53	4 / 8			
reaction time	0.174	interval		3.78	3.83	3.98	4.17		4.40	4.57	4.64	4.67	4.74	5.72			11.59	13.14	14.05
		velocity	7.46	9.26	9.14	8.79	8.39		7.95	7.66	7.54	7.49	7.38	6.99	7.92		9.06	7.99	7.47
H1 lead leg	R	strides		13	13	13	13			14	14	14	14	17.2	125.2				

Semi-Final 1

date 25-Jun-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Selmon, Kenny (USA) (1996)		time	6.10	9.83	13.63	17.53	21.47		25.60	29.80	34.13	38.70	43.30		48.51	6 / 1			
reaction time	0.242	interval		3.73	3.80	3.90	3.94		4.13	4.20	4.33	4.57	4.60	5.21			11.43	12.27	13.50
		velocity	7.38	9.38	9.21	8.97	8.88		8.47	8.33	8.08	7.66	7.61	7.68	8.25		9.19	8.56	7.78
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	14	14	17	156				
Rosser, Khallifah (USA) (199		time	5.93	9.63	13.37	17.17	21.13			29.63	33.97	38.58	43.43		49.04	4 / 2			
reaction time	0.209	interval		3.70	3.74	3.80	3.96			8.50	4.34	4.61	4.85	5.61			11.24	12.46	13.80
		velocity	7.59	9.46	9.36	9.21	8.84			8.24	8.06	7.59	7.22	7.13	8.16		9.34	8.43	7.61
H1 lead leg	R	strides		13	13	13	13		14		14	15	15	18.5	128.5				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Levingston, Isaiah (USA) (19		time	6.13	10.00	13.90	18.00	22.20	26.47	30.77	35.13	39.60	44.10		49.34	8 / 3				
reaction time	0.247	interval		3.87	3.90	4.10	4.20	4.27	4.30	4.36	4.47	4.50	5.24			11.87	12.77	13.33	
		velocity	7.34	9.04	8.97	8.54	8.33	8.20	8.14	8.03	7.83	7.78	7.63	8.11		8.85	8.22	7.88	
H1 lead leg	L	strides	21	13	13	13	13	13	13	13	13	31	16.2	172.2					
Allen, CJ (USA) (1995)		time	6.10	10.00	13.90	17.87	21.97	26.10	30.47	34.93	39.50	44.30		49.72	3 / 4				
reaction time	0.225	interval		3.90	3.90	3.97	4.10	4.13	4.37	4.46	4.57	4.80	5.42			11.77	12.60	13.83	
		velocity	7.38	8.97	8.97	8.82	8.54	8.47	8.01	7.85	7.66	7.29	7.38	8.05		8.92	8.33	7.59	
H1 lead leg	L	strides	19	13	13	13	13		13	14	15	15	18.2	146.2					
Dean, Caleb (USA) (2001)		time	5.93	9.77	13.67	17.60	21.77	26.07	30.53	35.03	39.77	44.53		49.78	7 / 5				
reaction time	0.178	interval		3.84	3.90	3.93	4.17	4.30	4.46	4.50	4.74	4.76	5.25			11.67	12.93	14.00	
		velocity	7.59	9.11	8.97	8.91	8.39	8.14	7.85	7.78	7.38	7.35	7.62	8.04		9.00	8.12	7.50	
H1 lead leg	R	strides		13	13	13	13	15	15	15	15	15	18	145					
Schneider, Drake (USA) (199		time	6.13	9.97	13.80	17.80	21.97	26.27	30.77	35.43	40.27	45.20		50.89	9 / 6				
reaction time	0.283	interval		3.84	3.83	4.00	4.17	4.30	4.50	4.66	4.84	4.93	5.69			11.67	12.97	14.43	
		velocity	7.34	9.11	9.14	8.75	8.39	8.14	7.78	7.51	7.23	7.10	7.03	7.86		9.00	8.10	7.28	
H1 lead leg	R	strides		13	13	13	13	14	14	15	15	15		125					
Jordan, Quivell (USA) (1999)		time	5.93	9.77	13.87	18.03	22.27	26.57	31.07	35.63	40.37	45.17		50.94	2 / 7				
reaction time	0.178	interval		3.84	4.10	4.16	4.24	4.30	4.50	4.56	4.74	4.80	5.77			12.10	13.04	14.10	
		velocity	7.59	9.11	8.54	8.41	8.25	8.14	7.78	7.68	7.38	7.29	6.93	7.85		8.68	8.05	7.45	
H1 lead leg	L	strides	21	13	14	14	14		15	15	15	15		136					
Holmes, TJ (USA) (1995)		time	6.07	9.93	13.73	17.53	21.53	25.83	30.57	35.33	40.43	45.93		53.98	5 / 8				
reaction time	0.189	interval		3.86	3.80	3.80	4.00	4.30	4.74	4.76	5.10	5.50	8.05			11.46	13.04	15.36	
		velocity	7.41	9.07	9.21	9.21	8.75	8.14	7.38	7.35	6.86	6.36	4.97	7.41		9.16	8.05	6.84	
H1 lead leg	L	strides	19	12	12	13	13	13	14	14	14	15		139					

Heat 2

date 24-Jun-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.80	9.51	13.31	17.38	21.45		25.69	30.03	34.37	38.80	43.61		49.12	6 / 1			
reaction time	0.252	interval		3.71	3.80	4.07	4.07		4.24	4.34	4.34	4.43	4.81	5.51			11.58	12.65	13.58
		velocity	7.76	9.43	9.21	8.60	8.60		8.25	8.06	8.06	7.90	7.28	7.26	8.14		9.07	8.30	7.73
H1 lead leg	R	strides	20	13	12	14	13		13	13	13	13	14	17	155				
Kendziera, Dave (USA) (1994		time	5.94	9.74	13.61	17.58	21.65		25.89	30.23	34.67	39.17	43.78		49.19	8 / 2			
reaction time	0.250	interval		3.80	3.87	3.97	4.07		4.24	4.34	4.44	4.50	4.61	5.41			11.64	12.65	13.55
		velocity	7.58	9.21	9.04	8.82	8.60		8.25	8.06	7.88	7.78	7.59	7.39	8.13		9.02	8.30	7.75
H1 lead leg	R	strides		13	13	13	13		13	13	14	14	14	17.5	137.5				
Rosser, Khallifah (USA) (199		time	5.77	9.44	13.18	17.08	21.19		25.42	29.79	34.16	38.77	43.61		49.28	5 / 3			
reaction time	0.246	interval		3.67	3.74	3.90	4.11		4.23	4.37	4.37	4.61	4.84	5.67			11.31	12.71	13.82
		velocity	7.80	9.54	9.36	8.97	8.52		8.27	8.01	8.01	7.59	7.23	7.05	8.12		9.28	8.26	7.60
H1 lead leg	R	strides		13	13	13	13		14	14	14	14	14	18	140				
Allen, CJ (USA) (1995)		time	5.94	9.71	13.54	17.55	21.65		25.89	30.30	34.67	39.26	43.91		49.45	4 / 4			
reaction time	0.235	interval		3.77	3.83	4.01	4.10		4.24	4.41	4.37	4.59	4.65	5.54			11.61	12.75	13.61
		velocity	7.58	9.28	9.14	8.73	8.54		8.25	7.94	8.01	7.63	7.53	7.22	8.09		9.04	8.24	7.71
H1 lead leg	L	strides		13	13	13	13			14	14	15	15	18	128				

Heat 1

date 24-Jun-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Selmon, Kenny (USA) (1996)		time	6.00	9.78	13.68	17.65	21.72			30.13	34.50	39.10	43.71		49.03	3 / 1			
reaction time	0.190	interval		3.78	3.90	3.97	4.07			8.41	4.37	4.60	4.61	5.32			11.65	12.48	13.58
		velocity	7.50	9.26	8.97	8.82	8.60			8.32	8.01	7.61	7.59	7.52	8.16		9.01	8.41	7.73
H1 lead leg	R	strides		13	13	13	13				13	14	14	16.7	109.7				
Levingston, Isaiah (USA) (19		time	5.97	9.84	13.81	17.85	21.99		26.20	30.46	34.80	39.20	43.78		49.06	8 / 2			
reaction time	0.192	interval		3.87	3.97	4.04	4.14		4.21	4.26	4.34	4.40	4.58	5.28			11.88	12.61	13.32
		velocity	7.54	9.04	8.82	8.66	8.45		8.31	8.22	8.06	7.95	7.64	7.58	8.15		8.84	8.33	7.88
H1 lead leg	L	strides		13	13	13	13		13	13	13	13	13	16	133				

2020 Chinese Olympic Trials (Shaoxing, CHN)

FINAL

date 13-Jun-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Xie Zhiyu (CHN) (2000)		time	6.22	10.21	14.25	18.28	22.47		26.91	31.38	35.97	40.44	44.98		50.00	6 / 1			
reaction time	0.225	interval		3.99	4.04	4.03	4.19		4.44	4.47	4.59	4.47	4.54	5.02			12.06	13.10	13.60
		velocity	7.23	8.77	8.66	8.68	8.35		7.88	7.83	7.63	7.83	7.71	7.97	8.00		8.71	8.02	7.72
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	14	14	17	160				
Li Guangzhen (CHN) (1995)		time	6.19	10.16	14.18	18.28	22.52		26.83	31.35	36.04	40.67	45.33		50.58	3 / 2			
reaction time	0.195	interval		3.97	4.02	4.10	4.24		4.31	4.52	4.69	4.63	4.66	5.25	PB		12.09	13.07	13.98
		velocity	7.27	8.82	8.71	8.54	8.25		8.12	7.74	7.46	7.56	7.51	7.62	7.91		8.68	8.03	7.51
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	17.7	170.7				
Cui Caizhuang (CHN) (1995)		time	6.11	10.09	14.13	18.26	22.47		26.88	31.41	36.02	40.66	45.30		50.59	4 / 3			

reaction time	0.167	interval		3.98	4.04	4.13	4.21	4.41	4.53	4.61	4.64	4.64	5.29	PB		12.15	13.15	13.89
		velocity	7.36	8.79	8.66	8.47	8.31	7.94	7.73	7.59	7.54	7.54	7.56	7.91		8.64	7.98	7.56
H1 lead leg	R	strides	22	14	14	14	14	15	15	15	15	15	18.2	171.2				
Ye Anan (CHN) (2004)		time	6.09	9.98	14.13	18.20	22.49	26.86	31.41	36.02	40.62	45.24		50.73	5 / 4			
reaction time	0.215	interval		3.89	4.15	4.07	4.29	4.37	4.55	4.61	4.60	4.62	5.49	PB		12.11	13.21	13.83
		velocity	7.39	9.00	8.43	8.60	8.16	8.01	7.69	7.59	7.61	7.58	7.29	7.88		8.67	7.95	7.59
H1 lead leg	L	strides	22	14	14	14	14	14	15	15	15	15	18.2	170.2				
Shang Shuo (CHN) (1995)		time	6.41	10.53	14.73	19.02	23.29	27.74	32.26	36.79	41.41	46.06		51.40	7 / 5			
reaction time	0.185	interval		4.12	4.20	4.29	4.27	4.45	4.52	4.53	4.62	4.65	5.34			12.61	13.24	13.80
		velocity	7.02	8.50	8.33	8.16	8.20	7.87	7.74	7.73	7.58	7.53	7.49	7.78		8.33	7.93	7.61
H1 lead leg	L	strides	22	14	14	14	14	14	14	15	15	15	18	169				
Song Jiahui (CHN) (2002)		time	6.24	10.34	14.46	18.55	22.77	27.08	31.53	36.07	40.89	45.83		51.57	8 / 6			
reaction time	0.198	interval		4.10	4.12	4.09	4.22	4.31	4.45	4.54	4.82	4.94	5.74			12.31	12.98	14.30
		velocity	7.21	8.54	8.50	8.56	8.29	8.12	7.87	7.71	7.26	7.09	6.97	7.76		8.53	8.09	7.34
H1 lead leg	L	strides	20	13	13	13	13	13	13	13	14	14	18	157				
Lin Zhikai (CHN) (2001)		time	6.19	10.19	14.30	18.45	22.74	27.16		36.39	41.24	46.21		52.13	2 / 7			
reaction time	0.168	interval		4.00	4.11	4.15	4.29	4.42		9.23	4.85	4.97	5.92			12.26		
		velocity	7.27	8.75	8.52	8.43	8.16	7.92		7.58	7.22	7.04	6.76	7.67		8.56		
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	15	18.5	175.5				
Gong Debin (CHN) (1997)		time	5.95	9.96	13.95	18.28	22.65	27.41	32.23	37.09	41.98	47.01		53.07	1 / 8			
reaction time	0.257	interval		4.01	3.99	4.33	4.37	4.76	4.82	4.86	4.89	5.03	6.06			12.33	13.95	14.78
		velocity	7.56	8.73	8.77	8.08	8.01	7.35	7.26	7.20	7.16	6.96	6.60	7.54		8.52	7.53	7.10
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	19	171				

2021 NCAA Championships (Eugene, OR) (TV Analysis)

FINAL date 11-Jun-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Burrell, Sean (USA) (2002)		time	5.87	9.70		17.43	21.33			29.56	33.97	38.40	42.83		47.85	8 / 1			
reaction time	0.194	interval		3.83		7.73	3.90			8.23	4.41	4.43	4.43	5.02	WJR		11.56	12.13	13.27
		velocity	7.67	9.14		9.06	8.97			8.51	7.94	7.90	7.90	7.97	8.36		9.08	8.66	7.91
H1 lead leg	L	strides	22	14			14				15	15	15	18.2	113.2				
Levingston, Isaiah (USA) (19		time	5.97	9.77		17.75	21.80			30.16	34.57	39.07	43.57		48.49	9 / 2			
reaction time	0.233	interval		3.80		7.98	4.05			8.36	4.41	4.50	4.50	4.92	PB		11.78	12.41	13.41
		velocity	7.54	9.21		8.77	8.64			8.37	7.94	7.78	7.78	8.13	8.25		8.91	8.46	7.83
H1 lead leg	L	strides	21	13			13				13	14	14	16.5	104.5				
Samuel, Cameron (USA) (19		time	5.93	9.60		17.32	21.33			29.65	34.13	38.73	43.37		48.68	7 / 3			
reaction time	0.201	interval		3.67		7.72	4.01			8.32	4.48	4.60	4.64	5.31	PB		11.39	12.33	13.72
		velocity	7.59	9.54		9.07	8.73			8.41	7.81	7.61	7.54	7.53	8.22		9.22	8.52	7.65
H1 lead leg	R	strides	21	14			14				15	15	15	18.5	112.5				
Mpoke, Moitalel (KEN) (2001		time	6.03	9.83	13.80	17.77	21.70		25.89	30.13	34.63	39.23	43.73		48.70	6 / 4			
reaction time	0.267	interval		3.80	3.97	3.97	3.93		4.19	4.24	4.50	4.60	4.50	4.97	PB		11.74	12.36	13.60
		velocity	7.46	9.21	8.82	8.82	8.91		8.36	8.25	7.78	7.61	7.78	8.05	8.21		8.94	8.50	7.72
H1 lead leg	R	strides	21	13	14	14	13		14	14	15	15	15	18.5	166.5				
Metivier, Malik (CAN) (1998)		time	5.90	9.57		17.33	21.35		25.60	30.17	34.77	39.43	44.10		49.26	4 / 5			
reaction time	0.144	interval		3.67		7.76	4.02		4.25	4.57	4.60	4.66	4.67	5.16	PB		11.43	12.84	13.93
		velocity	7.63	9.54		9.02	8.71		8.24	7.66	7.61	7.51	7.49	7.75	8.12		9.19	8.18	7.54
H1 lead leg	R	strides	22	13			13		14	14	15	15	15	18.2	139.2				
Ledgister, Leonardo (JAM) (		time	5.97	9.60		17.17	21.10		25.20	29.50	34.03	38.80	43.77		49.28	3 / 6			
reaction time	0.228	interval		3.63		7.57	3.93		4.10	4.30	4.53	4.77	4.97	5.51			11.20	12.33	14.27
		velocity	7.54	9.64		9.25	8.91		8.54	8.14	7.73	7.34	7.04	7.26	8.12		9.38	8.52	7.36
H1 lead leg	R	strides	22	14			14		14	15	15	16	16	18.2	144.2				
Harvey, Jonathan (USA) (19		time	5.87	9.57		17.20	21.27			30.07	34.70	39.33	44.03		49.64	2 / 7			
reaction time	0.149	interval		3.70		7.63	4.07			8.80	4.63	4.63	4.70	5.61	PB		11.33	12.87	13.96
		velocity	7.67	9.46		9.17	8.60			7.95	7.56	7.56	7.45	7.13	8.06		9.27	8.16	7.52
H1 lead leg	R	strides	21	13			13				15	15	15	18.5	110.5				
Brockman, Charles (USA) (1		time	6.03	9.77	13.60	17.50	21.53		25.77	30.27	34.83	39.50	44.33		49.92	5 / 8			
reaction time	0.190	interval		3.74	3.83	3.90	4.03		4.24	4.50	4.56	4.67	4.83	5.59			11.47	12.77	14.06
		velocity	7.46	9.36	9.14	8.97	8.68		8.25	7.78	7.68	7.49	7.25	7.16	8.01		9.15	8.22	7.47
H1 lead leg	R	strides	22	14	14	13	14		15	15	15	15	15		152				
Jordan, Quivell (USA) (1999)		time	6.00	9.75		17.73	21.80			30.57	35.20	40.00			50.54	1 / 9			
reaction time	0.166	interval		3.75		7.98	4.07			8.77	4.63	4.80					11.73	12.84	
		velocity	7.50	9.33		8.77	8.60			7.98	7.56	7.29			7.91		8.95	8.18	
H1 lead leg	L	strides	21	13			14				15	15			78				

2021 Denka Athletics Challenge Cup (Niigata, JPN)

FINAL date 06-Jun-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (		time	5.96	9.79	13.66	17.67	21.76		25.93	30.18	34.70	39.27	43.98		49.38	3 / 1			
reaction time		interval		3.83	3.87	4.01	4.09		4.17	4.25	4.52	4.57	4.71	5.40			11.71	12.51	13.80
		velocity	7.55	9.14	9.04	8.73	8.56		8.39	8.24	7.74	7.66	7.43	7.41	8.10		8.97	8.39	7.61
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.2	164.2				
Yamamoto, Tatsuhiro (JPN)		time	6.09	9.98	13.88	17.88	21.94		26.06	30.40	34.82	39.44	44.23		49.70	4 / 2			
reaction time		interval		3.89	3.90	4.00	4.06		4.12	4.34	4.42	4.62	4.79	5.47			11.79	12.52	13.83
		velocity	7.39	9.00	8.97	8.75	8.62		8.50	8.06	7.92	7.58	7.31	7.31	8.05		8.91	8.39	7.59
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	18.2	169.2				
Iwasaki, Takafumi (JPN) (199		time	6.06	9.91	13.91	17.97	22.15		26.41	30.76	35.19	39.77	44.43		49.73	7 / 3			
reaction time		interval		3.85	4.00	4.06	4.18		4.26	4.35	4.43	4.58	4.66	5.30			11.91	12.79	13.67
		velocity	7.43	9.09	8.75	8.62	8.37		8.22	8.05	7.90	7.64	7.51	7.55	8.04		8.82	8.21	7.68
H1 lead leg	L	strides	21	14	14	14	14		14	15	15	15	15	18.2	169.2				
Kawagoe, Hiroya (JPN) (1997		time	6.09	10.03	14.03	18.07	22.19		26.51	30.88	35.35	39.97	44.68		50.11	8 / 4			
reaction time		interval		3.94	4.00	4.04	4.12		4.32	4.37	4.47	4.62	4.71	5.43			11.98	12.81	13.80
		velocity	7.39	8.88	8.75	8.66	8.50		8.10	8.01	7.83	7.58	7.43	7.37	7.98		8.76	8.20	7.61
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15		152				

B FINAL

date 06-Jun-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tsutsue, Kaito (JPN) (1998)		time	6.02	9.74	13.56	17.43	21.54		25.78	30.16	34.68	39.37	44.26		49.98	7 / 1			
reaction time		interval		3.72	3.82	3.87	4.11		4.24	4.38	4.52	4.69	4.89	5.72			11.41	12.73	14.10
		velocity	7.48	9.41	9.16	9.04	8.52		8.25	7.99	7.74	7.46	7.16	6.99	8.00		9.20	8.25	7.45
H1 lead leg	R	strides	22	13	13	13	14		14	14	15	15	15	19.7	167.7				
Matsushita, Yuki (JPN) (1991		time	6.16	9.99	13.96	17.97	22.12		26.53	31.01	35.62	40.26	44.94		50.31	5 / 2			
reaction time		interval		3.83	3.97	4.01	4.15		4.41	4.48	4.61	4.64	4.68	5.37			11.81	13.04	13.93
		velocity	7.31	9.14	8.82	8.73	8.43		7.94	7.81	7.59	7.54	7.48	7.45	7.95		8.89	8.05	7.54
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.2	164.2				
Yamada, Atsushi (JPN) (1991		time	5.99	9.71	13.48	17.38	21.45		25.76	30.25	34.97	39.76	44.73		50.33	8 / 3			
reaction time		interval		3.72	3.77	3.90	4.07		4.31	4.49	4.72	4.79	4.97	5.60			11.39	12.87	14.48
		velocity	7.51	9.41	9.28	8.97	8.60		8.12	7.80	7.42	7.31	7.04	7.14	7.95		9.22	8.16	7.25
H1 lead leg	L	strides	21	13	13	13	14		14	14	15	15	15	19.2	166.2				

C FINAL

date 06-Jun-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kajiki, Ryo (JPN) (1995)		time	5.96	9.78	13.66	17.65	21.79		26.13	30.58	35.19	39.92	44.81		50.33	9 / 1			
reaction time		interval		3.82	3.88	3.99	4.14		4.34	4.45	4.61	4.73	4.89	5.52			11.69	12.93	14.23
		velocity	7.55	9.16	9.02	8.77	8.45		8.06	7.87	7.59	7.40	7.16	7.25	7.95		8.98	8.12	7.38
H1 lead leg		strides		14	14	14	14		14	14	15	15	15		129				

2021 Bislett Night of Highlights (Oslo, NOR) (TV Analysis) (300m Hurdles)

FINAL

date 04-Jun-21

Henson (2021) - Athlete First: 2021 Karsten Warholm 400m Hurdles World Record Season

			H1	H2	H3	H4	H5	200m	H6	H7				Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	6.12	9.60	13.16	16.78	20.60		24.52	28.58					33.26	7 / 1			
reaction time		interval		3.48	3.56	3.62	3.82		3.92	4.06				4.68	**WB PB**		10.66	11.80	
		velocity	8.17	10.06	9.83	9.67	9.16		8.93	8.62				8.55	9.02		9.85	8.90	
H1 lead leg	L	strides	23	13	13	13	13		13	13				17	118				

2021 Michitaka Kinami Memorial (Osaka, JPN)

FINAL

date 01-Jun-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Inoue, Kakeru (JPN) (1996)		time	6.04	9.76	13.61	17.52	21.55		25.73	30.08	34.58	39.27	44.18		49.80	8 / 1			
reaction time	0.258	interval		3.72	3.85	3.91	4.03		4.18	4.35	4.50	4.69	4.91	5.62			11.48	12.56	14.10
		velocity	7.45	9.41	9.09	8.95	8.68		8.37	8.05	7.78	7.46	7.13	7.12	8.03		9.15	8.36	7.45
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Kishimoto, Takayuki (JPN) (		time	6.01	9.79	13.66	17.62	21.67		25.99	30.25	34.73	39.55	44.44		49.97	5 / 2			
reaction time	0.140	interval		3.78	3.87	3.96	4.05		4.32	4.26	4.48	4.82	4.89	5.53			11.61	12.63	14.19
		velocity	7.49	9.26	9.04	8.84	8.64		8.10	8.22	7.81	7.26	7.16	7.23	8.00		9.04	8.31	7.40
H1 lead leg	R	strides	21	13	13	13	13		14	14	14	15	15	18.2	163.2				
Kawagoe, Hiroya (JPN) (1997		time	6.21	10.14	14.11	18.17	22.36		26.63	31.06	35.59	40.29	45.10		50.61	4 / 3			
reaction time	0.182	interval		3.93	3.97	4.06	4.19		4.27	4.43	4.53	4.70	4.81	5.51			11.96	12.89	14.04
		velocity	7.25	8.91	8.82	8.62	8.35		8.20	7.90	7.73	7.45	7.28	7.26	7.90		8.78	8.15	7.48
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.5	170.5				

B FINAL

date 01-Jun-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Toyoda, Masaki (JPN) (1998)		time	6.14	10.09	14.13	18.28	22.49		26.76	31.01	35.42	40.02	44.69		49.94	8 / 1			
reaction time	0.214	interval		3.95	4.04	4.15	4.21		4.27	4.25	4.41	4.60	4.67	5.25			12.14	12.73	13.68
		velocity	7.33	8.86	8.66	8.43	8.31		8.20	8.24	7.94	7.61	7.49	7.62	8.01		8.65	8.25	7.68
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18.5	168.5				
Yamamoto, Tatsuhiro (JPN)		time	6.09	10.03	14.03	17.95	22.04		26.31	30.65	35.04	39.62	44.44		49.99	5 / 2			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.165	interval		3.94	4.00	3.92	4.09	4.27	4.34	4.39	4.58	4.82	5.55			11.86	12.70	13.79
		velocity	7.39	8.88	8.75	8.93	8.56	8.20	8.06	7.97	7.64	7.26	7.21	8.00		8.85	8.27	7.61
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	19	171				
Kajiki, Ryo (JPN) (1995)		time	6.04	9.79	13.61	17.60	21.64	25.88	30.35	34.90	39.69	44.58		50.16	7 / 3			
reaction time	0.248	interval		3.75	3.82	3.99	4.04	4.24	4.47	4.55	4.79	4.89	5.58			11.56	12.75	14.23
		velocity	7.45	9.33	9.16	8.77	8.66	8.25	7.83	7.69	7.31	7.16	7.17	7.97		9.08	8.24	7.38
H1 lead leg	R	strides	20	13	13	13	13	13	14	14	15	15	18.5	161.5				
Nozawa, Keisuke (JPN) (1991		time	6.29	10.16	14.20	18.28	22.51	26.73	31.10	35.60	40.24	45.03		50.56	6 / 4			
reaction time	0.199	interval		3.87	4.04	4.08	4.23	4.22	4.37	4.50	4.64	4.79	5.53			11.99	12.82	13.93
		velocity	7.15	9.04	8.66	8.58	8.27	8.29	8.01	7.78	7.54	7.31	7.23	7.91		8.76	8.19	7.54
H1 lead leg	L	strides	21	14	14	14	14	14	14	15	15	15	19	169				

C FINAL

date 01-Jun-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Yamamoto, Ryo (JPN) (1995)		time	6.24	10.16	14.10	18.17	22.37		26.73	31.11	35.59	40.21	44.94		50.45	8 / 1			
reaction time	0.177	interval		3.92	3.94	4.07	4.20		4.36	4.38	4.48	4.62	4.73	5.51			11.93	12.94	13.83
		velocity	7.21	8.93	8.88	8.60	8.33		8.03	7.99	7.81	7.58	7.40	7.26	7.93		8.80	8.11	7.59
H1 lead leg	R	strides	21	14	14	14	14		15	15	15	15	15	18.5	170.5				

2021 Shimane High School Championships (Honshu, JPN)

FINAL

date 29-May-21

Shimizu (2021) - shimane high school championships 2021 - biomechanics data analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
山根　悠介		time	6.40	10.62	15.02	19.52	24.15		28.97	34.15	39.38	44.85	50.23		56.03	3 / 1			
reaction time		interval		4.22	4.40	4.50	4.63		4.82	5.18	5.23	5.47	5.38	5.80			13.12	14.63	16.08
		velocity	7.03	8.29	7.95	7.78	7.56		7.26	6.76	6.69	6.40	6.51	6.90	7.14		8.00	7.18	6.53
H1 lead leg		strides	22	15	15	15	15		15	16	16	17	17	19.7	182.7				
森木　大翔		time	6.93	11.47	16.10	20.78	25.63		30.53	35.63	40.80	46.05	51.32		57.17	5 / 2			
reaction time		interval		4.54	4.63	4.68	4.85		4.90	5.10	5.17	5.25	5.27	5.85			13.85	14.85	15.69
		velocity	6.49	7.71	7.56	7.48	7.22		7.14	6.86	6.77	6.67	6.64	6.84	7.00		7.58	7.07	6.69
H1 lead leg		strides	22	15	15	15	15		15	17	17	17	17	20.3	185.3				
佐々木　輝		time	6.75	11.25	15.87	20.58	25.47		30.57	35.80	41.10	46.38	51.77		57.30	4 / 3			
reaction time		interval		4.50	4.62	4.71	4.89		5.10	5.23	5.30	5.28	5.39	5.53			13.83	15.22	15.97
		velocity	6.67	7.78	7.58	7.43	7.16		6.86	6.69	6.60	6.63	6.49	7.23	6.98		7.59	6.90	6.57
H1 lead leg		strides	22	15	15	15	15		17	17	17	19	19	21.3	192.3				

2021 Doha Diamond League (Doha, QAT) (TV Analysis)

FINAL

date 28-May-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.80	9.54	13.38	17.38	21.39	23.0	25.44	29.53	33.73	37.97	42.24		47.38	5 / 1			
reaction time	0.203	interval		3.74	3.84	4.00	4.01		4.05	4.09	4.20	4.24	4.27	5.14			11.58	12.15	12.71
		velocity	7.76	9.36	9.11	8.75	8.73	8.70	8.64	8.56	8.33	8.25	8.20	7.78	8.44		9.07	8.64	8.26
H1 lead leg	R	strides	20	13	13	13			13	13	13	13	13	16.2	140.2				
dos Santos, Alison (BRA) (2		time	5.70	9.37	13.18	17.05	20.95	22.7	25.12	29.33	33.60	37.94	42.34		47.57	6 / 2			
reaction time	0.187	interval		3.67	3.81	3.87	3.90		4.17	4.21	4.27	4.34	4.40	5.23	AR PB		11.35	12.28	13.01
		velocity	7.89	9.54	9.19	9.04	8.97	8.81	8.39	8.31	8.20	8.06	7.95	7.65	8.41		9.25	8.55	8.07
H1 lead leg	L	strides	20	13	13	12	12		13	13	13	13	13	16.2	151.2				
McMaster, Kyron (IVB) (1997		time	5.70	9.37	13.21	17.15	21.19	22.9	25.31	29.53	33.87	38.24	42.64		47.82	3 / 3			
reaction time	0.199	interval		3.67	3.84	3.94	4.04		4.12	4.22	4.34	4.37	4.40	5.18			11.45	12.38	13.11
		velocity	7.89	9.54	9.11	8.88	8.66	8.73	8.50	8.29	8.06	8.01	7.95	7.72	8.36		9.17	8.48	8.01
H1 lead leg	R	strides	20	13	13	13			13	13	14	14	14	17	144				
Samba, Abderrahman (QAT)		time	5.87	9.71	13.61	17.58	21.59	23.3	25.66	29.99	34.27	38.60	42.91		48.26	4 / 4			
reaction time	0.153	interval		3.84	3.90	3.97	4.01		4.07	4.33	4.28	4.33	4.31	5.35			11.71	12.41	12.92
		velocity	7.67	9.11	8.97	8.82	8.73	8.58	8.60	8.08	8.18	8.08	8.12	7.48	8.29		8.97	8.46	8.13
H1 lead leg	R	strides	21	13	13	13			13	13	13	14	14	17	144				
Selmon, Kenneth (USA) (199		time	6.17	9.91	13.85	17.78	21.85	23.5	25.96	30.23	34.57	39.07	43.71		49.03	7 / 5			
reaction time	0.314	interval		3.74	3.94	3.93	4.07		4.11	4.27	4.34	4.50	4.64	5.32			11.61	12.45	13.48
		velocity	7.29	9.36	8.88	8.91	8.60	8.51	8.52	8.20	8.06	7.78	7.54	7.52	8.16		9.04	8.43	7.79
H1 lead leg	R	strides	21	13	13	13			13	13	13	14	14		127				
Copello, Yasmani (TUR) (198		time	5.84	9.54	13.45	17.52	21.69	23.4			34.77	39.30	43.81		49.11	2 / 6			
reaction time	0.203	interval		3.70	3.91	4.07	4.17				13.08	4.53	4.51	5.30			11.68		
		velocity	7.71	9.46	8.95	8.60	8.39	8.55			8.03	7.73	7.76	7.55	8.14		8.99		
H1 lead leg	R	strides	20	13	13	13						14	14	17.5	104.5				
Barr, Thomas (IRL) (1992)		time	6.07	9.94				23.9			35.50	40.09	44.68		49.91	1 / 7			
reaction time	0.204	interval		3.87							25.56	4.59	4.59	5.23					
		velocity	7.41	9.04				8.37			8.22	7.63	7.63	7.65	8.01				
H1 lead leg	L	strides	20	13								14	14		61				
Kendziera, David (USA) (199		time	5.90	9.84	13.85	17.88	22.02	23.7	26.26	30.60	35.20	39.94	44.74		50.39	8 / 8			
reaction time	0.197	interval		3.94	4.01	4.03	4.14		4.24	4.34	4.60	4.74	4.80	5.65			11.98	12.72	14.14

		velocity	7.63	8.88	8.73	8.68	8.45	8.44	8.25	8.06	7.61	7.38	7.29	7.08	7.94		8.76	8.25	7.43
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	14		140				

B FINAL

date 28-May-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Othman, Ashraf Hussen (QA		time	6.16	10.20	14.33	18.50	22.67	24.5	26.77		35.30	39.67	44.17		49.58	5 / 1			
reaction time	0.171	interval		4.04	4.13	4.17	4.17		4.10		8.53	4.37	4.50	5.41	PB		12.34		
		velocity	7.31	8.66	8.47	8.39	8.39	8.16	8.54		8.21	8.01	7.78	7.39	8.07		8.51		
H1 lead leg	R	strides	22	14	14	14	14		14			15	15	18	140				
Shoaib, Mohamed (SUD) (19		time	6.10	10.10	14.27	18.57	23.10	25.1	27.53	31.97	36.40	41.00	45.70		51.16	8 / 2			
reaction time	0.191	interval		4.00	4.17	4.30	4.53		4.43	4.44	4.43	4.60	4.70	5.46			12.47	13.40	13.73
		velocity	7.38	8.75	8.39	8.14	7.73	7.97	7.90	7.88	7.90	7.61	7.45	7.33	7.82		8.42	7.84	7.65
H1 lead leg	R	strides	21	13	13	14	14		14		14	14	14	17.2	148.2				
Abdalmujied, Amor Ebed (Q		time	6.10	9.93	14.00	18.20	22.53	24.5	26.97	31.70	36.37	41.17	45.97		51.40	3 / 3			
reaction time	0.168	interval		3.83	4.07	4.20	4.33		4.44	4.73	4.67	4.80	4.80	5.43	PB		12.10	13.50	14.27
		velocity	7.38	9.14	8.60	8.33	8.08	8.16	7.88	7.40	7.49	7.29	7.29	7.37	7.78		8.68	7.78	7.36
H1 lead leg	L	strides	22	14	14	14	14		14		15	15	15	18.7	155.7				
Touati, Mohamed (TUN) (19		time	5.93	9.73	13.60	17.67	21.77	23.7	26.13	30.60	35.17	39.77	45.67		52.11	6 / 4			
reaction time	0.155	interval		3.80	3.87	4.07	4.10		4.36	4.47	4.57	4.60	5.90	6.44			11.74	12.93	15.07
		velocity	7.59	9.21	9.04	8.60	8.54	8.44	8.03	7.83	7.66	7.61	5.93	6.21	7.68		8.94	8.12	6.97
H1 lead leg	L	strides	21	14	13	14	14		14	14	14	14	16	18	166				
Saifeldin, Muhand Khamis (		time	6.10	10.13	14.27	18.60	23.07	25.1	27.73	32.47	37.33	42.17	47.27		53.06	4 / 5			
reaction time	0.127	interval		4.03	4.14	4.33	4.47		4.66	4.74	4.86	4.84	5.10	5.79			12.50	13.87	14.80
		velocity	7.38	8.68	8.45	8.08	7.83	7.97	7.51	7.38	7.20	7.23	6.86	6.91	7.54		8.40	7.57	7.09
H1 lead leg	L	strides	22	14	14	14	14		14		14	14	15		135				
Pirjahan, Mahdi (IRI) (1999)		time	5.97	9.93	13.93	17.97	22.17	24.1	26.50	30.90	35.30	39.90			dnf	7 / --			
reaction time	0.138	interval		3.96	4.00	4.04	4.20		4.33	4.40	4.40	4.60					12.00	12.93	
		velocity	7.54	8.84	8.75	8.66	8.33	8.30	8.08	7.95	7.95	7.61					8.75	8.12	
H1 lead leg	L	strides	20	14	13	13	13		13	13	13	13			125				

2021 Philippe Cup Athletics Invitational (Wuhan, CHN)

FINAL

date 20-May-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Guangzhen (CHN) (1995)		time	6.47	10.49	14.48	18.55	22.76		27.19	31.75	36.37	41.02	45.86		51.17	7 / 1			
reaction time	0.210	interval		4.02	3.99	4.07	4.21		4.43	4.56	4.62	4.65	4.84	5.31			12.08	13.20	14.11
		velocity	6.96	8.71	8.77	8.60	8.31		7.90	7.68	7.58	7.53	7.23	7.53	7.82		8.69	7.95	7.44
H1 lead leg	R	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Song Haotian (CHN) (1999)		time	6.29	10.29	14.31	18.42	22.62		27.04	31.68	36.32	41.11	46.18		51.66	5 / 2			
reaction time	0.242	interval		4.00	4.02	4.11	4.20		4.42	4.64	4.64	4.79	5.07	5.48	PB		12.13	13.26	14.50
		velocity	7.15	8.75	8.71	8.52	8.33		7.92	7.54	7.54	7.31	6.90	7.30	7.74		8.66	7.92	7.24
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	19.5	172.5				
Lu Shengjing (CHN) (1998)		time	6.17	10.24	14.35	18.53	22.81		27.21	31.68	36.33	41.04	46.06		51.83	6 / 3			
reaction time	0.189	interval		4.07	4.11	4.18	4.28		4.40	4.47	4.65	4.71	5.02	5.77	PB		12.36	13.15	14.38
		velocity	7.29	8.60	8.52	8.37	8.18		7.95	7.83	7.53	7.43	6.97	6.93	7.72		8.50	7.98	7.30
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Wang Siqing (CHN) (1999)		time	6.30	10.38	14.50	18.70	23.04		27.39	31.86		41.32	46.36		51.96	3 / 4			
reaction time	0.201	interval		4.08	4.12	4.20	4.34		4.35	4.47		9.46	5.04	5.60	PB		12.40	13.16	14.50
		velocity	7.14	8.58	8.50	8.33	8.06		8.05	7.83		7.40	6.94	7.14	7.70		8.47	7.98	7.24
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	16	16	20	179				
Wei Pinyang (CHN) (2001)		time	6.17	10.14	14.38	18.67	23.21		27.91	32.77	37.77	43.19			55.87	4 / 5			
reaction time	0.234	interval		3.97	4.24	4.29	4.54		4.70	4.86	5.00	10.42					12.50	14.10	
		velocity	7.29	8.82	8.25	8.16	7.71		7.45	7.20	7.00	6.72			7.16		8.40	7.45	
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	17			143				

2021 USATF Golden Games (Walnut, CA) (TV Analysis)

FINAL

date 09-May-21

Henson (2021) - Athlete First: 2021 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.84	9.44	13.21	17.08	21.02		24.99	29.09	33.37	37.67	42.11		47.13	5 / 1			
reaction time		interval		3.60	3.77	3.87	3.94		3.97	4.10	4.28	4.30	4.44	5.02			11.24	12.01	13.02
		velocity	7.71	9.72	9.28	9.04	8.88		8.82	8.54	8.18	8.14	7.88	7.97	8.49		9.34	8.74	8.06
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
McMaster, Kyron (IVB) (1997		time	5.80	9.41	13.18	17.02	20.92		24.96	29.19	33.53	37.97	42.47		47.50	6 / 2			
reaction time		interval		3.61	3.77	3.84	3.90		4.04	4.23	4.34	4.44	4.50	5.03	NR PB		11.22	12.17	13.28
		velocity	7.76	9.70	9.28	9.11	8.97		8.66	8.27	8.06	7.88	7.78	7.95	8.42		9.36	8.63	7.91
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	14	16.7	156.7				
dos Santos, Alison (BRA) (2		time	6.04	9.71	13.51	17.45	21.42		25.56	29.73	34.03	38.40	42.77		47.68	4 / 3			
reaction time		interval		3.67	3.80	3.94	3.97		4.14	4.17	4.30	4.37	4.37	4.91	AR PB		11.41	12.28	13.04
		velocity	7.45	9.54	9.21	8.88	8.82		8.45	8.39	8.14	8.01	8.01	8.15	8.39		9.20	8.55	8.05

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	L	strides	20	13	13	12	12		13	13	13	13	13	16.2	151.2			

2021 Ready Steady Tokyo (Tokyo, JPN)

FINAL

date 09-May-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kurokawa, Kazuki (JPN) (20(		time	5.77	9.36	13.06	16.92	20.97		25.23	29.40	33.80	38.36	43.14		48.68	6 / 1			
reaction time	0.150	interval		3.59	3.70	3.86	4.05		4.26	4.17	4.40	4.56	4.78	5.54	PB		11.15	12.48	13.74
		velocity	7.80	9.75	9.46	9.07	8.64		8.22	8.39	7.95	7.68	7.32	7.22	8.22		9.42	8.41	7.64
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Yamauchi, Hiromu (JPN) (19		time	6.01	9.91	13.90	17.90	21.99		26.16	30.30	34.68	39.14	43.68		48.84	7 / 2			
reaction time	0.187	interval		3.90	3.99	4.00	4.09		4.17	4.14	4.38	4.46	4.54	5.16	PB		11.89	12.40	13.38
		velocity	7.49	8.97	8.77	8.75	8.56		8.39	8.45	7.99	7.85	7.71	7.75	8.19		8.83	8.47	7.85
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18.5	168.5				
Toyoda, Masaki (JPN) (1998)		time	5.92	9.74	13.66	17.75	21.82		26.03	30.31	34.67	39.14	43.69		48.87	4 / 3			
reaction time	0.158	interval		3.82	3.92	4.09	4.07		4.21	4.28	4.36	4.47	4.55	5.18	PB		11.83	12.56	13.38
		velocity	7.60	9.16	8.93	8.56	8.60		8.31	8.18	8.03	7.83	7.69	7.72	8.18		8.88	8.36	7.85
H1 lead leg		strides		14	14	14	14		14	14	15	15	15	18.5	147.5				
Abe, Takatoshi (JPN) (1991)		time	5.96	9.61	13.36	17.25	21.25		25.48	29.96	34.47	39.14	43.94		49.45	5 / 4			
reaction time	0.164	interval		3.65	3.75	3.89	4.00		4.23	4.48	4.51	4.67	4.80	5.51			11.29	12.71	13.98
		velocity	7.55	9.59	9.33	9.00	8.75		8.27	7.81	7.76	7.49	7.29	7.26	8.09		9.30	8.26	7.51
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				
Iwasaki, Takafumi (JPN) (199		time	5.99	9.81	13.73	17.77	21.92		26.26	30.68	35.14	39.72	44.34		49.64	2 / 5			
reaction time	0.183	interval		3.82	3.92	4.04	4.15		4.34	4.42	4.46	4.58	4.62	5.30	PB		11.78	12.91	13.66
		velocity	7.51	9.16	8.93	8.66	8.43		8.06	7.92	7.85	7.64	7.58	7.55	8.06		8.91	8.13	7.69
H1 lead leg		strides		14	14	14	14		14	15	15	15	15		130				
Kawagoe, Hiroya (JPN) (1997		time	5.96	9.79	13.75	17.75	21.86		26.16	30.50	35.04	39.62	44.29		49.76	9 / 6			
reaction time	0.142	interval		3.83	3.96	4.00	4.11		4.30	4.34	4.54	4.58	4.67	5.47	PB		11.79	12.75	13.79
		velocity	7.55	9.14	8.84	8.75	8.52		8.14	8.06	7.71	7.64	7.49	7.31	8.04		8.91	8.24	7.61
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Matsushita, Yuki (JPN) (1991		time	5.97	9.71	13.56	17.47	21.59		25.93	30.41	34.97	39.62	44.31		49.88	8 / 7			
reaction time	0.164	interval		3.74	3.85	3.91	4.12		4.34	4.48	4.56	4.65	4.69	5.57			11.50	12.94	13.90
		velocity	7.54	9.36	9.09	8.95	8.50		8.06	7.81	7.68	7.53	7.46	7.18	8.02		9.13	8.11	7.55
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Suguimati, Mahau (BRA) (19		time	6.09	9.86	13.76	17.82	21.99		26.38	30.78	35.26	39.87	44.64		50.11	3 / 8			
reaction time	0.130	interval		3.77	3.90	4.06	4.17		4.39	4.40	4.48	4.61	4.77	5.47			11.73	12.96	13.86
		velocity	7.39	9.28	8.97	8.62	8.39		7.97	7.95	7.81	7.59	7.34	7.31	7.98		8.95	8.10	7.58
H1 lead leg		strides		13	13	13	13		13	13	13	13	14		118				
Chen Chieh (TPE) (1992)		time	6.17	10.16	14.18	18.34	22.62		27.14	31.78	36.57	41.44	46.43		52.08	1 / 9			
reaction time	0.177	interval		3.99	4.02	4.16	4.28		4.52	4.64	4.79	4.87	4.99	5.65			12.17	13.44	14.65
		velocity	7.29	8.77	8.71	8.41	8.18		7.74	7.54	7.31	7.19	7.01	7.08	7.68		8.63	7.81	7.17
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				

2021 Shizuoka International Athletics Meeting (Fukuroi, JPN)

Final

date 03-May-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kurokawa, Kazuki (JPN) (20(		time	5.96	9.61	13.43	17.38	21.54		25.94	30.28	34.80	39.46	44.36		50.20	6 / 1			
reaction time	0.185	interval		3.65	3.82	3.95	4.16		4.40	4.34	4.52	4.66	4.90	5.84			11.42	12.90	14.08
		velocity	7.55	9.59	9.16	8.86	8.41		7.95	8.06	7.74	7.51	7.14	6.85	7.97		9.19	8.14	7.46
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	20	166				
Yamauchi, Hiromu (JPN) (19		time	6.17	10.09	14.21	18.34	22.54		26.79	31.13	35.59	40.15	44.81		50.23	3 / 2			
reaction time	0.224	interval		3.92	4.12	4.13	4.20		4.25	4.34	4.46	4.56	4.66	5.42			12.17	12.79	13.68
		velocity	7.29	8.93	8.50	8.47	8.33		8.24	8.06	7.85	7.68	7.51	7.38	7.96		8.63	8.21	7.68
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	19.2	169.2				
Abe, Takatoshi (JPN) (1991)		time	6.02	9.66	13.46	17.33	21.29		25.49	29.85	34.40	39.16	44.09		50.35	4 / 3			
reaction time	0.166	interval		3.64	3.80	3.87	3.96		4.20	4.36	4.55	4.76	4.93	6.26			11.31	12.52	14.24
		velocity	7.48	9.62	9.21	9.04	8.84		8.33	8.03	7.69	7.35	7.10	6.39	7.94		9.28	8.39	7.37
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	19.2	165.2				
Toyoda, Masaki (JPN) (1998)		time	5.97	9.83	13.86	17.97	22.19		26.53	30.85	35.35	40.06	44.99		50.82	8 / 4			
reaction time	0.197	interval		3.86	4.03	4.11	4.22		4.34	4.32	4.50	4.71	4.93	5.83			12.00	12.88	14.14
		velocity	7.54	9.07	8.68	8.52	8.29		8.06	8.10	7.78	7.43	7.10	6.86	7.87		8.75	8.15	7.43
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	19	169				

B FINAL

date 03-May-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kawagoe, Hiroya (JPN) (1997		time	6.09	9.96	13.91	17.95	22.07		26.36	30.76	35.24	39.77	44.48		49.91	5 / 1			
reaction time	0.184	interval		3.87	3.95	4.04	4.12		4.29	4.40	4.48	4.53	4.71	5.43			11.86	12.81	13.72
		velocity	7.39	9.04	8.86	8.66	8.50		8.16	7.95	7.81	7.73	7.43	7.37	8.01		8.85	8.20	7.65
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19	171				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Matsushita, Yuki (JPN) (1991		time	6.19	10.01	13.93	17.92	22.06	26.44	30.90	35.52	40.21	44.98		50.52	9 / 2			
reaction time	0.218	interval		3.82	3.92	3.99	4.14	4.38	4.46	4.62	4.69	4.77	5.54			11.73	12.98	14.08
		velocity	7.27	9.16	8.93	8.77	8.45	7.99	7.85	7.58	7.46	7.34	7.22	7.92		8.95	8.09	7.46
H1 lead leg	R	strides	21	13	13	13	13	14	14	15	15	15	18.5	164.5				
Kishimoto, Takayuki (JPN) (		time	5.99	9.83	13.75	17.83	22.04	26.39	30.81	35.39	40.06	44.91		50.56	4 / 3			
reaction time	0.145	interval		3.84	3.92	4.08	4.21	4.35	4.42	4.58	4.67	4.85	5.65			11.84	12.98	14.10
		velocity	7.51	9.11	8.93	8.58	8.31	8.05	7.92	7.64	7.49	7.22	7.08	7.91		8.87	8.09	7.45
H1 lead leg	R	strides	21	13	13	13	13	14	14	15	15	15	18.5	164.5				

C FINAL

date 03-May-21

Sugimoto (2021) - race analysis of men's and women's 400m hurdles in the 2021 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Iwasaki, Takafumi (JPN) (199		time	6.01	9.86	13.88	17.97	22.09		26.41	30.85	35.42	40.11	44.84		50.44	4 / 1			
reaction time	0.192	interval		3.85	4.02	4.09	4.12		4.32	4.44	4.57	4.69	4.73	5.60			11.96	12.88	13.99
		velocity	7.49	9.09	8.71	8.56	8.50		8.10	7.88	7.66	7.46	7.40	7.14	7.93		8.78	8.15	7.51
H1 lead leg	L	strides	21	14	14	14	14		14	15	15	15	15	19	170				

2021 East China District Meeting (Zhaoqing, CHN)

FINAL

date 25-Apr-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Cai Junqi (CHN) (1996)		time	6.26	10.34	14.50	18.70	23.03		27.38	31.80	36.27	40.80	45.33		50.64	7 / 1			
reaction time	0.178	interval		4.08	4.16	4.20	4.33		4.35	4.42	4.47	4.53	4.53	5.31			12.44	13.10	13.53
		velocity	7.19	8.58	8.41	8.33	8.08		8.05	7.92	7.83	7.73	7.73	7.53	7.90		8.44	8.02	7.76
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Ye Anan (CHN) (2004)		time	6.21	10.21	14.33	18.47	22.82		27.16	31.68	36.24	41.04	45.79		51.15	5 / 2			
reaction time	0.221	interval		4.00	4.12	4.14	4.35		4.34	4.52	4.56	4.80	4.75	5.36	PB		12.26	13.21	14.11
		velocity	7.25	8.75	8.50	8.45	8.05		8.06	7.74	7.68	7.29	7.37	7.46	7.82		8.56	7.95	7.44
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18.5	169.5				
Lin Zhikai (CHN) (2001)		time	6.30	10.28	14.35	18.50	22.79		27.17	31.72	36.40	41.19	46.13		51.81	3 / 3			
reaction time	0.201	interval		3.98	4.07	4.15	4.29		4.38	4.55	4.68	4.79	4.94	5.68			12.20	13.22	14.41
		velocity	7.14	8.79	8.60	8.43	8.16		7.99	7.69	7.48	7.31	7.09	7.04	7.72		8.61	7.94	7.29
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Wang Guozhong (CHN) (19		time	5.96	9.98	14.11	18.35	22.71		27.14	31.83	36.64	41.53	46.53		52.22	2 / 4			
reaction time	0.177	interval		4.02	4.13	4.24	4.36		4.43	4.69	4.81	4.89	5.00	5.69			12.39	13.48	14.70
		velocity	7.55	8.71	8.47	8.25	8.03		7.90	7.46	7.28	7.16	7.00	7.03	7.66		8.47	7.79	7.14
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	18	174				
Lu Shengjing (CHN) (1998)		time	6.36	10.48	14.77	19.14	23.59		28.06	32.78	37.59	42.39	47.13		52.34	4 / 5			
reaction time	0.217	interval		4.12	4.29	4.37	4.45		4.47	4.72	4.81	4.80	4.74	5.21			12.78	13.64	14.35
		velocity	7.08	8.50	8.16	8.01	7.87		7.83	7.42	7.28	7.29	7.38	7.68	7.64		8.22	7.70	7.32
H1 lead leg	L	strides	22	15	15	15	15		15	16	16	15	15	18	177				
Wang Hongwen (CHN) (200		time	6.29	10.37	14.50	18.76	23.18		27.70	32.46	37.25	42.15	47.10		52.41	9 / 6			
reaction time	0.202	interval		4.08	4.13	4.26	4.42		4.52	4.76	4.79	4.90	4.95	5.31			12.47	13.70	14.64
		velocity	7.15	8.58	8.47	8.22	7.92		7.74	7.35	7.31	7.14	7.07	7.53	7.63		8.42	7.66	7.17
H1 lead leg	L	strides	21	14	14	14	14		14	15	15	15	15	17.5	168.5				
Bai Jiarui (CHN) (1995)		time	6.51	10.76	15.09	19.56	24.10		28.75	33.50	38.40	43.38	48.40		53.92	8 / 7			
reaction time	0.279	interval		4.25	4.33	4.47	4.54		4.65	4.75	4.90	4.98	5.02	5.52			13.05	13.94	14.90
		velocity	6.91	8.24	8.08	7.83	7.71		7.53	7.37	7.14	7.03	6.97	7.25	7.42		8.05	7.53	7.05
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	17	168				

Heat 3

date 25-Apr-21

CAA Hurdle Development (2021)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Wang Siqing (CHN) (1999)		time	6.30	10.30	14.34	18.52	22.80		27.14	31.64	36.38	41.26	46.36		52.32	8 / 1			
reaction time	0.230	interval		4.00	4.04	4.18	4.28		4.34	4.50	4.74	4.88	5.10	5.96			12.22	13.12	14.72
		velocity	7.14	8.75	8.66	8.37	8.18		8.06	7.78	7.38	7.17	6.86	6.71	7.65		8.59	8.00	7.13
H1 lead leg	L	strides	22	15	15	15	15		15	15	16	16	16	20.5	180.5				
Lin Zhikai (CHN) (2001)		time	6.30	10.34	14.46	18.66	23.00		27.42	31.98	36.62	41.42	46.42		52.54	7 / 2			
reaction time	0.203	interval		4.04	4.12	4.20	4.34		4.42	4.56	4.64	4.80	5.00	6.12			12.36	13.32	14.44
		velocity	7.14	8.66	8.50	8.33	8.06		7.92	7.68	7.54	7.29	7.00	6.54	7.61		8.50	7.88	7.27
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Gong Debin (CHN) (1997)		time	6.24	10.29	14.64	18.94	23.54		28.14	32.85	37.67	42.54	47.36		52.97	5 / 3			
reaction time	0.300	interval		4.05	4.35	4.30	4.60		4.60	4.71	4.82	4.87	4.82	5.61			12.70	13.91	14.51
		velocity	7.21	8.64	8.05	8.14	7.61		7.61	7.43	7.26	7.19	7.26	7.13	7.55		8.27	7.55	7.24
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18	170				
Du Yuanpeng (CHN) (2000)		time	6.61	10.76	15.03	19.42	24.02		28.74	33.72	38.75	44.08	49.72		55.53	4 / 4			
reaction time	0.225	interval		4.15	4.27	4.39	4.60		4.72	4.98	5.03	5.33	5.64	5.81			12.81	14.30	16.00
		velocity	6.81	8.43	8.20	7.97	7.61		7.42	7.03	6.96	6.57	6.21	6.88	7.20		8.20	7.34	6.56
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	16	17	18.5	174.5				
Yang Pengjun (CHN) (2002)		time	6.34	10.36	14.58	18.88	23.32		27.78	32.58	37.82	43.53	49.83		55.58	6 / 5			

reaction time	0.230	interval		4.02	4.22	4.30	4.44	4.46	4.80	5.24	5.71	6.30	5.75			12.54	13.70	17.25
		velocity	7.10	8.71	8.29	8.14	7.88	7.85	7.29	6.68	6.13	5.56	6.96	7.20		8.37	7.66	6.09
H1 lead leg	L	strides	22	15	15	15	15	15	17	17	19	19	19	188				

Heat 2

date 25-Apr-21 — *CAA Hurdle Development (2021)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Cai Junqi (CHN) (1996)		time	6.38	10.52	14.84	19.20	23.62		28.06	32.54	36.98	41.50	46.08		51.88	6 / 1			
reaction time	0.204	interval		4.14	4.32	4.36	4.42		4.44	4.48	4.44	4.52	4.58	5.80			12.82	13.34	13.54
		velocity	7.05	8.45	8.10	8.03	7.92		7.88	7.81	7.88	7.74	7.64	6.90	7.71		8.19	7.87	7.75
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Lu Shengjing (CHN) (1998)		time	6.47	10.64	14.98	19.37	23.79		28.23	32.78	37.33	41.99	46.71		51.96	3 / 2			
reaction time	0.240	interval		4.17	4.34	4.39	4.42		4.44	4.55	4.55	4.66	4.72	5.25	PB		12.90	13.41	13.93
		velocity	6.96	8.39	8.06	7.97	7.92		7.88	7.69	7.69	7.51	7.42	7.62	7.70		8.14	7.83	7.54
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18	175				
Bai Jiarui (CHN) (1995)		time	6.41	10.58	14.83	19.13	23.49		27.93	32.51	37.17	42.04	46.96		52.34	5 / 3			
reaction time	0.233	interval		4.17	4.25	4.30	4.36		4.44	4.58	4.66	4.87	4.92	5.38			12.72	13.38	14.45
		velocity	7.02	8.39	8.24	8.14	8.03		7.88	7.64	7.51	7.19	7.11	7.43	7.64		8.25	7.85	7.27
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	17	168				
Zhuang Zhixiong (CHN) (19		time	6.39	10.51	14.76	19.15	23.64		28.33	33.22	38.25	43.56	49.03		55.17	4 / 4			
reaction time	0.199	interval		4.12	4.25	4.39	4.49		4.69	4.89	5.03	5.31	5.47	6.14			12.76	14.07	15.81
		velocity	7.04	8.50	8.24	7.97	7.80		7.46	7.16	6.96	6.59	6.40	6.51	7.25		8.23	7.46	6.64
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	17	17	19.5	181.5				

Heat 1

date 25-Apr-21 — *CAA Hurdle Development (2021)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Ye Anan (CHN) (2004)		time	6.28	10.24	14.48	18.72	23.10		27.61	32.11	36.70	41.47	46.31		51.82	6 / 1			
reaction time	0.299	interval		3.96	4.24	4.24	4.38		4.51	4.50	4.59	4.77	4.84	5.51	PB		12.44	13.39	14.20
		velocity	7.17	8.84	8.25	8.25	7.99		7.76	7.78	7.63	7.34	7.23	7.26	7.72		8.44	7.84	7.39
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	19	172				
Wang Hongwen (CHN) (200		time	6.22	10.19	14.23	18.50	22.87		27.36	31.95	36.69	41.53	46.55		52.39	4 / 2			
reaction time	0.242	interval		3.97	4.04	4.27	4.37		4.49	4.59	4.74	4.84	5.02	5.84			12.28	13.45	14.60
		velocity	7.23	8.82	8.66	8.20	8.01		7.80	7.63	7.38	7.23	6.97	6.85	7.64		8.55	7.81	7.19
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18	168				
Wang Guozhong (CHN) (19		time	5.99	9.96	14.20	18.62	23.16		27.76	32.45	37.17	42.01	47.00		52.63	3 / 3			
reaction time	0.185	interval		3.97	4.24	4.42	4.54		4.60	4.69	4.72	4.84	4.99	5.63			12.63	13.83	14.55
		velocity	7.51	8.82	8.25	7.92	7.71		7.61	7.46	7.42	7.23	7.01	7.10	7.60		8.31	7.59	7.22
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	18	174				
Shen Kunhao (CHN) (2004)		time	6.42	10.54	14.72	19.05	23.54		28.26	33.05	37.85	42.83	47.78		53.19	5 / 4			
reaction time	0.198	interval		4.12	4.18	4.33	4.49		4.72	4.79	4.80	4.98	4.95	5.41			12.63	14.00	14.73
		velocity	7.01	8.50	8.37	8.08	7.80		7.42	7.31	7.29	7.03	7.07	7.39	7.52		8.31	7.50	7.13
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18	170				
Liang Chao (CHN) (2000)		time	6.22	10.34	14.54	18.92	23.38		28.06	32.85	37.74	42.81	48.01		53.86	8 / 5			
reaction time	0.168	interval		4.12	4.20	4.38	4.46		4.68	4.79	4.89	5.07	5.20	5.85			12.70	13.93	15.16
		velocity	7.23	8.50	8.33	7.99	7.85		7.48	7.31	7.16	6.90	6.73	6.84	7.43		8.27	7.54	6.93
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19	171				
Han Mingkun (CHN) (1995)		time	6.46	10.54	14.78	19.26	23.91		28.66	33.42	38.19	43.04	48.16		54.11	7 / 6			
reaction time	0.205	interval		4.08	4.24	4.48	4.65		4.75	4.76	4.77	4.85	5.12	5.95			12.80	14.16	14.74
		velocity	6.97	8.58	8.25	7.81	7.53		7.37	7.35	7.34	7.22	6.84	6.72	7.39		8.20	7.42	7.12
H1 lead leg	L	strides	21	14	14	15	15		15	15	15	15	16	19	174				

2021 National Grand Prix (Chengdu, CHN)

FINAL

date 02-Apr-21 — *CAA Hurdle Development (2021)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Cui Caizhuang (CHN) (1995)		time	6.16	10.16	14.26	18.41	22.61		26.94	31.42	36.02	40.75	45.52		50.85	3 / 1			
reaction time	0.193	interval		4.00	4.10	4.15	4.20		4.33	4.48	4.60	4.73	4.77	5.33	PB		12.25	13.01	14.10
		velocity	7.31	8.75	8.54	8.43	8.33		8.08	7.81	7.61	7.40	7.34	7.50	7.87		8.57	8.07	7.45
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	15	19	172				
Zheng Pan (CHN) (2001)		time	6.15	10.08	14.06	18.11	22.33		26.69	31.27	36.05	41.17	46.40		52.27	7 / 2			
reaction time	0.187	interval		3.93	3.98	4.05	4.22		4.36	4.58	4.78	5.12	5.23	5.87			11.96	13.16	15.13
		velocity	7.32	8.91	8.79	8.64	8.29		8.03	7.64	7.32	6.84	6.69	6.81	7.65		8.78	7.98	6.94
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	16	16	19	178				
Song Haotian (CHN) (1999)		time	6.31	10.38	14.38	18.58	22.91		27.46	32.22	37.00	42.10	47.17		52.54	8 / 3			
reaction time	0.250	interval		4.07	4.00	4.20	4.33		4.55	4.76	4.78	5.10	5.07	5.37	PB		12.27	13.64	14.95
		velocity	7.13	8.60	8.75	8.33	8.08		7.69	7.35	7.32	6.86	6.90	7.45	7.61		8.56	7.70	7.02
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	16	16	19	174				
Luo Xinyu (CHN) (2002)		time	6.21	10.31	14.56	18.83	23.16		27.72	32.44	37.22	42.24	47.17		52.54	6 / 4			
reaction time	0.198	interval		4.10	4.25	4.27	4.33		4.56	4.72	4.78	5.02	4.93	5.37	PB		12.62	13.61	14.73
		velocity	7.25	8.54	8.24	8.20	8.08		7.68	7.42	7.32	6.97	7.10	7.45	7.61		8.32	7.71	7.13

H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	18.5	170.5				
Wu Jinhong (CHN) (2005)		time	6.30	10.40	14.66	18.98	23.44	28.19	32.99	37.97	43.09	48.27		53.86	2 / 5			
reaction time	0.205	interval		4.10	4.26	4.32	4.46	4.75	4.80	4.98	5.12	5.18	5.59			12.68	14.01	15.28
		velocity	7.14	8.54	8.22	8.10	7.85	7.37	7.29	7.03	6.84	6.76	7.16	7.43		8.28	7.49	6.87
H1 lead leg	R	strides	22	15	15	15	15	16	16	17	17	17	20	185				
Li Guancheng (CHN) (2002)		time	6.21	10.40	14.68	19.03	23.46	27.99	32.59	37.32	42.35	47.83		54.09	4 / 6			
reaction time	0.204	interval		4.19	4.28	4.35	4.43	4.53	4.60	4.73	5.03	5.48	6.26			12.82	13.56	15.24
		velocity	7.25	8.35	8.18	8.05	7.90	7.73	7.61	7.40	6.96	6.39	6.39	7.40		8.19	7.74	6.89
H1 lead leg	L	strides	21	14	14	13	13	14	14	14	14	15	18	164				
Kong Jie (CHN) (2003)		time	6.33	10.43	14.71	19.08	23.48	28.09	32.92	37.90	43.07	48.43		54.89	1 / 7			
reaction time	0.264	interval		4.10	4.28	4.37	4.40	4.61	4.83	4.98	5.17	5.36	6.46			12.75	13.84	15.51
		velocity	7.11	8.54	8.18	8.01	7.95	7.59	7.25	7.03	6.77	6.53	6.19	7.29		8.24	7.59	6.77
H1 lead leg	L	strides	21	17	15	15	15	15	15	15	15	15	19	177				
Xu Zhihang (CHN) (1997)		time	6.41	10.65	15.01	19.43	23.98	28.71	33.61	38.82	44.03			nt	5 / 8			
reaction time	0.264	interval		4.24	4.36	4.42	4.55	4.73	4.90	5.21	5.21					13.02	14.18	
		velocity	7.02	8.25	8.03	7.92	7.69	7.40	7.14	6.72	6.72					8.06	7.40	
H1 lead leg	L	strides	21	14	14	14	14	14	14	15	15			135				

Heat 2

date 01-Apr-21 *CAA Hurdle Development (2021)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Xu Zhihang (CHN) (1997)		time	6.18	10.14	14.18	18.28	22.42		26.80	31.28	36.02	41.00	46.08		51.84	2 / 1			
reaction time	0.217	interval		3.96	4.04	4.10	4.14		4.38	4.48	4.74	4.98	5.08	5.76			12.10	13.00	14.80
		velocity	7.28	8.84	8.66	8.54	8.45		7.99	7.81	7.38	7.03	6.89	6.94	7.72		8.68	8.08	7.09
H1 lead leg	L	strides	21	14	14	14	14		15	15	16	16	16	19.5	174.5				
Luo Xinyu (CHN) (2002)		time	6.28	10.36	14.60	18.90	23.30		27.84	32.44	37.26	42.22	47.14		52.62	4 / 2			
reaction time	0.235	interval		4.08	4.24	4.30	4.40		4.54	4.60	4.82	4.96	4.92	5.48	PB		12.62	13.54	14.70
		velocity	7.17	8.58	8.25	8.14	7.95		7.71	7.61	7.26	7.06	7.11	7.30	7.60		8.32	7.75	7.14
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.5	170.5				
Zheng Pan (CHN) (2001)		time	6.46	10.58	14.80	19.00	23.28		27.70	32.22	36.92	41.98	47.14		52.78	3 / 3			
reaction time	0.203	interval		4.12	4.22	4.20	4.28		4.42	4.52	4.70	5.06	5.16	5.64	PB		12.54	13.22	14.92
		velocity	6.97	8.50	8.29	8.33	8.18		7.92	7.74	7.45	6.92	6.78	7.09	7.58		8.37	7.94	7.04
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	16	16	19	178				

Heat 1

date 01-Apr-21 *CAA Hurdle Development (2021)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Cui Caizhuang (CHN) (1995)		time	6.22	10.22	14.32	18.54	22.82		27.26	31.90	36.66	41.52	46.42		51.93	4 / 1			
reaction time	0.194	interval		4.00	4.10	4.22	4.28		4.44	4.64	4.76	4.86	4.90	5.51			12.32	13.36	14.52
		velocity	7.23	8.75	8.54	8.29	8.18		7.88	7.54	7.35	7.20	7.14	7.26	7.70		8.52	7.86	7.23
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	15	18.5	171.5				
Li Guancheng (CHN) (2002)		time	6.12	10.32	14.64	19.04	23.48		27.92	32.40	36.98	41.82	46.88		52.61	5 / 2			
reaction time	0.212	interval		4.20	4.32	4.40	4.44		4.44	4.48	4.58	4.84	5.06	5.73	PB		12.92	13.36	14.48
		velocity	7.35	8.33	8.10	7.95	7.88		7.88	7.81	7.64	7.23	6.92	6.98	7.60		8.13	7.86	7.25
H1 lead leg	L	strides	21	14	14	14	14		14	14	14	15	15	18	167				
Song Haotian (CHN) (1999)		time	6.40	10.60	14.88	19.20	23.70		28.30	33.00	37.76	42.62	47.48		52.85	7 / 3			
reaction time	0.192	interval		4.20	4.28	4.32	4.50		4.60	4.70	4.76	4.86	4.86	5.37	PB		12.80	13.80	14.48
		velocity	7.03	8.33	8.18	8.10	7.78		7.61	7.45	7.35	7.20	7.20	7.45	7.57		8.20	7.61	7.25
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Kong Jie (CHN) (2003)		time	6.28	10.46	14.80	19.08	23.54		28.10	32.82	37.68	42.70	47.96		53.91	6 / 4			
reaction time	0.233	interval		4.18	4.34	4.28	4.46		4.56	4.72	4.86	5.02	5.26	5.95			12.80	13.74	15.14
		velocity	7.17	8.37	8.06	8.18	7.85		7.68	7.42	7.20	6.97	6.65	6.72	7.42		8.20	7.64	6.94
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	18	174				

2020 Japanese U20 National Championships (Hiroshima, JPN)

FINAL

date 25-Oct-20 *Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Deguchi, Haruto (JPN) (2001		time	6.41	10.49	14.70	19.00	23.51		28.06	32.60	37.22	41.89	46.68		52.17	4 / 1			
reaction time	0.195	interval		4.08	4.21	4.30	4.51		4.55	4.54	4.62	4.67	4.79	5.49			12.59	13.60	14.08
		velocity	7.02	8.58	8.31	8.14	7.76		7.69	7.71	7.58	7.49	7.31	7.29	7.67		8.34	7.72	7.46
H1 lead leg	L	strides	21	13	13	13	14		14	15	15	15	15	17.7	165.7				
山岡 竜太朗		time	6.36	10.54	14.80	19.15	23.59		28.03	32.63	37.34	42.13	47.05		52.52	6 / 2			
reaction time	0.156	interval		4.18	4.26	4.35	4.44		4.44	4.60	4.71	4.79	4.92	5.47			12.79	13.48	14.42
		velocity	7.08	8.37	8.22	8.05	7.88		7.88	7.61	7.43	7.31	7.11	7.31	7.62		8.21	7.79	7.28
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	16	16	19	178				
細野 颯人		time	6.42	10.69	15.08	19.54	24.09		28.78	33.52	38.36	43.11	47.80		52.97	3 / 3			
reaction time	0.202	interval		4.27	4.39	4.46	4.55		4.69	4.74	4.84	4.75	4.69	5.17			13.12	13.98	14.28
		velocity	7.01	8.20	7.97	7.85	7.69		7.46	7.38	7.23	7.37	7.46	7.74	7.55		8.00	7.51	7.35
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	18.2	175.2				

内藤 源一郎		time	6.44	10.59	14.83	19.20	23.62	28.21	32.90	37.65	42.53	47.73		53.45	5 / 4			
reaction time	0.186	interval		4.15	4.24	4.37	4.42	4.59	4.69	4.75	4.88	5.20	5.72			12.76	13.70	14.83
		velocity	6.99	8.43	8.25	8.01	7.92	7.63	7.46	7.37	7.17	6.73	6.99	7.48		8.23	7.66	7.08
H1 lead leg	R	strides	21	14	14	14	14	15	15	15	15	16		153				

B FINAL

date 25-Oct-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Yoneda, Taiyo (JPN) (2001)		time	6.22	10.28	14.46	18.72	23.09		27.61	32.32	37.14	42.03	47.00		52.56	4 / 1			
reaction time	0.163	interval		4.06	4.18	4.26	4.37		4.52	4.71	4.82	4.89	4.97	5.56			12.50	13.60	14.68
		velocity	7.23	8.62	8.37	8.22	8.01		7.74	7.43	7.26	7.16	7.04	7.19	7.61		8.40	7.72	7.15
H1 lead leg	R	strides	21	14	14	14	14		15	15	15	15	15	19	171				
田中 天智龍		time	6.47	10.66	14.83	19.19	23.61		28.06	32.68	37.50	42.51	47.60		53.43	6 / 2			
reaction time	0.199	interval		4.19	4.17	4.36	4.42		4.45	4.62	4.82	5.01	5.09	5.83			12.72	13.49	14.92
		velocity	6.96	8.35	8.39	8.03	7.92		7.87	7.58	7.26	6.99	6.88	6.86	7.49		8.25	7.78	7.04
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19.5	171.5				
一條 美竜夢		time	6.36	10.48	14.78	19.02	23.52		28.09	32.93	37.90	42.99	48.38		54.55	5 / 3			
reaction time	0.175	interval		4.12	4.30	4.24	4.50		4.57	4.84	4.97	5.09	5.39	6.17			12.66	13.91	15.45
		velocity	7.08	8.50	8.14	8.25	7.78		7.66	7.23	7.04	6.88	6.49	6.48	7.33		8.29	7.55	6.80
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	16		154				
Mizuguchi, Kai (JPN) (2001)		time	6.41	10.64	14.96	19.34	23.89		28.81	34.03	39.37	44.94	50.53		56.84	2 / 4			
reaction time	0.198	interval		4.23	4.32	4.38	4.55		4.92	5.22	5.34	5.57	5.59	6.31			12.93	14.69	16.50
		velocity	7.02	8.27	8.10	7.99	7.69		7.11	6.70	6.55	6.28	6.26	6.34	7.04		8.12	7.15	6.36
H1 lead leg	R	strides	21	14	14	14	14		15	15	15	17	16		155				

2020 Japanese High School National Championships (Hiroshima, JPN)

FINAL

date 25-Oct-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
菅野 航平		time	6.26	10.31	14.48	18.65	22.84		27.11	31.55	36.07	40.86	46.08		51.78	5 / 1			
reaction time	0.177	interval		4.05	4.17	4.17	4.19		4.27	4.44	4.52	4.79	5.22	5.70			12.39	12.90	14.53
		velocity	7.19	8.64	8.39	8.39	8.35		8.20	7.88	7.74	7.31	6.70	7.02	7.72		8.47	8.14	7.23
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	17	19	20.2	183.2				
Suzuki, Taiga (JPN) (2002)		time	6.11	10.04	14.18	18.30	22.47		26.83	31.36	36.14	41.24	46.45		52.20	4 / 2			
reaction time	0.173	interval		3.93	4.14	4.12	4.17		4.36	4.53	4.78	5.10	5.21	5.75			12.19	13.06	15.09
		velocity	7.36	8.91	8.45	8.50	8.39		8.03	7.73	7.32	6.86	6.72	6.96	7.66		8.61	8.04	6.96
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	17	17	19.2	175.2				
森髙 颯治朗		time	6.07	10.11	14.21	18.40	22.67		27.14	31.85	36.60	41.64	46.71		52.41	7 / 3			
reaction time	0.164	interval		4.04	4.10	4.19	4.27		4.47	4.71	4.75	5.04	5.07	5.70			12.33	13.45	14.86
		velocity	7.41	8.66	8.54	8.35	8.20		7.83	7.43	7.37	6.94	6.90	7.02	7.63		8.52	7.81	7.07
H1 lead leg	R	strides	21	14	14	14	14		15	15	15	16	16	19.7	173.7				
中山 敬太		time	6.42	10.59	14.81	19.09	23.51		28.18	33.07	38.02	42.96	47.90		52.95	6 / 4			
reaction time	0.195	interval		4.17	4.22	4.28	4.42		4.67	4.89	4.95	4.94	4.94	5.05			12.67	13.98	14.83
		velocity	7.01	8.39	8.29	8.18	7.92		7.49	7.16	7.07	7.09	7.09	7.92	7.55		8.29	7.51	7.08
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Toyoda, Ken (JPN) (2002)		time	6.12	10.06	14.13	18.23	22.46		26.94	31.68	36.64	41.71	46.91		52.96	3 / 5			
reaction time	0.175	interval		3.94	4.07	4.10	4.23		4.48	4.74	4.96	5.07	5.20	6.05			12.11	13.45	15.23
		velocity	7.35	8.88	8.60	8.54	8.27		7.81	7.38	7.06	6.90	6.73	6.61	7.55		8.67	7.81	6.89
H1 lead leg	R	strides	20	13	13	13	13		14	14	15	15	15	18.7	163.7				
中島 陽基		time	6.26	10.48	14.83	19.24	23.71		28.28	32.98	37.85	42.93	47.91		53.29	8 / 6			
reaction time	0.163	interval		4.22	4.35	4.41	4.47		4.57	4.70	4.87	5.08	4.98	5.38			12.98	13.74	14.93
		velocity	7.19	8.29	8.05	7.94	7.83		7.66	7.45	7.19	6.89	7.03	7.43	7.51		8.09	7.64	7.03
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	17	17		161				
新垣 颯斗		time	6.36	10.48	14.75	19.15	23.64		28.23	33.05	38.07	43.26	48.18		53.30	2 / 7			
reaction time	0.211	interval		4.12	4.27	4.40	4.49		4.59	4.82	5.02	5.19	4.92	5.12			12.79	13.90	15.13
		velocity	7.08	8.50	8.20	7.95	7.80		7.63	7.26	6.97	6.74	7.11	7.81	7.50		8.21	7.55	6.94
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	17	17	19.2	180.2				
殿山 凌平		time	6.17	10.31	14.46	18.70	23.01		27.54	32.45	37.72	42.93	48.15		53.99	1 / 8			
reaction time	0.155	interval		4.14	4.15	4.24	4.31		4.53	4.91	5.27	5.21	5.22	5.84			12.53	13.75	15.70
		velocity	7.29	8.45	8.43	8.25	8.12		7.73	7.13	6.64	6.72	6.70	6.85	7.41		8.38	7.64	6.69
H1 lead leg	L	strides	23	15	15	15	15		15	17	17	17	17		166				

2020 Michitaka Kinami Memorial (Osaka, JPN)

FINAL

date 24-Oct-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Oda, Masaya (JPN) (1995)		time	5.99	9.82	13.75	17.68	21.72		25.98	30.35	34.88	39.56	44.33		49.79	2 / 1			
reaction time		interval		3.83	3.93	3.93	4.04		4.26	4.37	4.53	4.68	4.77	5.46			11.69	12.67	13.98
		velocity	7.51	9.14	8.91	8.91	8.66		8.22	8.01	7.73	7.48	7.34	7.33	8.03		8.98	8.29	7.51
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19.2	171.2				
Yamamoto, Tatsuhiro (JPN)		time	6.06	9.99	13.96	17.92	21.96		26.08	30.36	34.87	39.62	44.48		49.93	8 / 2			

reaction time		interval		3.93	3.97	3.96	4.04	4.12	4.28	4.51	4.75	4.86	5.45			11.86	12.44	14.12
		velocity	7.43	8.91	8.82	8.84	8.66	8.50	8.18	7.76	7.37	7.20	7.34	8.01		8.85	8.44	7.44
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	18	170				
Nozawa, Keisuke (JPN) (1991		time	5.99	9.69	13.43	17.22	21.19	25.28	29.46	33.93	38.74	43.89		50.26	6 / 3			
reaction time		interval		3.70	3.74	3.79	3.97	4.09	4.18	4.47	4.81	5.15	6.37			11.23	12.24	14.43
		velocity	7.51	9.46	9.36	9.23	8.82	8.56	8.37	7.83	7.28	6.80	6.28	7.96		9.35	8.58	7.28
H1 lead leg	L	strides	21	13	13	13	14	14	14	14	15	16	20	167				
Matsushita, Yuki (JPN) (1991		time	6.07	9.93	13.80	17.63	21.60	25.78	30.11	34.68	39.47	44.44		50.34	7 / 4			
reaction time		interval		3.86	3.87	3.83	3.97	4.18	4.33	4.57	4.79	4.97	5.90			11.56	12.48	14.33
		velocity	7.41	9.07	9.04	9.14	8.82	8.37	8.08	7.66	7.31	7.04	6.78	7.95		9.08	8.41	7.33
H1 lead leg	R	strides	21	13	13	13	13	14	14	15	15	15	19.2	165.2				
Yamada, Atsushi (JPN) (1991		time	5.96	9.84	13.82	17.85	21.91	26.08	30.36	34.97	39.74	44.73		50.49	3 / 5			
reaction time		interval		3.88	3.98	4.03	4.06	4.17	4.28	4.61	4.77	4.99	5.76			11.89	12.51	14.37
		velocity	7.55	9.02	8.79	8.68	8.62	8.39	8.18	7.59	7.34	7.01	6.94	7.92		8.83	8.39	7.31
H1 lead leg	L	strides	21	14	14	14	14	14	14	15	15	15	20	170				

B FINAL

date 24-Oct-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Inoue, Kakeru (JPN) (1996)		time	6.18	10.09	14.13	18.18	22.34		26.68	31.13	35.72	40.44	45.20		50.60	1 / 1			
reaction time		interval		3.91	4.04	4.05	4.16		4.34	4.45	4.59	4.72	4.76	5.40			12.00	12.95	14.07
		velocity	7.28	8.95	8.66	8.64	8.41		8.06	7.87	7.63	7.42	7.35	7.41	7.91		8.75	8.11	7.46
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.7	164.7				
Ozaki, Yusuke (JPN) (1994)		time	6.26	10.11	14.01	18.00	22.16		26.38	30.83	35.37	40.14	44.98		50.63	2 / 2			
reaction time		interval		3.85	3.90	3.99	4.16		4.22	4.45	4.54	4.77	4.84	5.65			11.74	12.83	14.15
		velocity	7.19	9.09	8.97	8.77	8.41		8.29	7.87	7.71	7.34	7.23	7.08	7.90		8.94	8.18	7.42
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	17	17	21	182				
Sugai, Mitsuru (JPN) (1994)		time	6.07	9.94	13.86	17.83	21.99		26.36	30.81	35.39	40.12	44.99		50.86	6 / 3			
reaction time		interval		3.87	3.92	3.97	4.16		4.37	4.45	4.58	4.73	4.87	5.87			11.76	12.98	14.18
		velocity	7.41	9.04	8.93	8.82	8.41		8.01	7.87	7.64	7.40	7.19	6.81	7.86		8.93	8.09	7.40
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	19	165				

2020 Japanese National Championships (Niigata, JPN)

FINAL

date 02-Oct-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	6.01	9.59	13.35	17.17	21.10		25.28	29.68	34.23	39.01	43.94		49.73	5 / 1			
reaction time	0.170	interval		3.58	3.76	3.82	3.93		4.18	4.40	4.55	4.78	4.93	5.79			11.16	12.51	14.26
		velocity	7.49	9.78	9.31	9.16	8.91		8.37	7.95	7.69	7.32	7.10	6.91	8.04		9.41	8.39	7.36
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	19	163				
Yamamoto, Tatsuhiro (JPN)		time	6.06	9.91	13.86	17.87	22.01		26.28	30.66	35.12	39.69	44.38		49.79	4 / 2			
reaction time	0.156	interval		3.85	3.95	4.01	4.14		4.27	4.38	4.46	4.57	4.69	5.41			11.81	12.79	13.72
		velocity	7.43	9.09	8.86	8.73	8.45		8.20	7.99	7.85	7.66	7.46	7.39	8.03		8.89	8.21	7.65
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.7	170.7				
Toyoda, Masaki (JPN) (1998)		time	6.09	9.94	13.85	17.92	22.06		26.36	30.63	35.09	39.72	44.48		49.96	9 / 3			
reaction time	0.203	interval		3.85	3.91	4.07	4.14		4.30	4.27	4.46	4.63	4.76	5.48			11.83	12.71	13.85
		velocity	7.39	9.09	8.95	8.60	8.45		8.14	8.20	7.85	7.56	7.35	7.30	8.01		8.88	8.26	7.58
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18.7	168.7				
Oda, Masaya (JPN) (1995)		time	6.04	9.81	13.66	17.60	21.72		26.09	30.58	35.12	39.84	44.71		50.44	3 / 4			
reaction time	0.178	interval		3.77	3.85	3.94	4.12		4.37	4.49	4.54	4.72	4.87	5.73			11.56	12.98	14.13
		velocity	7.45	9.28	9.09	8.88	8.50		8.01	7.80	7.71	7.42	7.19	6.98	7.93		9.08	8.09	7.43
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19.7	171.7				
Yamauchi, Hiromu (JPN) (19		time	6.16	10.08	14.16	18.27	22.49		26.78	31.15	35.64	40.26	45.01		50.50	6 / 5			
reaction time	0.185	interval		3.92	4.08	4.11	4.22		4.29	4.37	4.49	4.62	4.75	5.49			12.11	12.88	13.86
		velocity	7.31	8.93	8.58	8.52	8.29		8.16	8.01	7.80	7.58	7.37	7.29	7.92		8.67	8.15	7.58
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	19.2	169.2				
Kawagoe, Hiroya (JPN) (1997		time	6.07	9.96	13.98	18.02	22.19		26.59	31.05	35.57	40.24	45.05		50.61	7 / 6			
reaction time	0.170	interval		3.89	4.02	4.04	4.17		4.40	4.46	4.52	4.67	4.81	5.56			11.95	13.03	14.00
		velocity	7.41	9.00	8.71	8.66	8.39		7.95	7.85	7.74	7.49	7.28	7.19	7.90		8.79	8.06	7.50
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19	171				
Hataura, Yusuke (JPN) (1998		time	6.16	9.99	13.93	17.95	22.14		26.48	30.85	35.34	39.99	44.91		50.80	8 / 7			
reaction time	0.131	interval		3.83	3.94	4.02	4.19		4.34	4.37	4.49	4.65	4.92	5.89			11.79	12.90	14.06
		velocity	7.31	9.14	8.88	8.71	8.35		8.06	8.01	7.80	7.53	7.11	6.79	7.87		8.91	8.14	7.47
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	15		153				
Kurokawa, Kazuki (JPN) (200		time	6.09	9.94	13.93	18.00	22.26		26.71	31.26	36.02	41.04	46.15		52.46	2 / 8			
reaction time	0.184	interval		3.85	3.99	4.07	4.26		4.45	4.55	4.76	5.02	5.11	6.31			11.91	13.26	14.89
		velocity	7.39	9.09	8.77	8.60	8.22		7.87	7.69	7.35	6.97	6.85	6.34	7.62		8.82	7.92	7.05
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15		146				

2020 Norweigen National Championships (Bergen, NOR) (TV Analysis)

FINAL date 20-Sep-20

Henson (2020) - Athlete First: 2020 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.73	9.33	13.07	16.87	20.80		24.83	29.03	33.30	37.93	42.67		48.23	7 / 1			
reaction time		interval		3.60	3.74	3.80	3.93		4.03	4.20	4.27	4.63	4.74	5.56			11.14	12.16	13.64
		velocity	7.85	9.72	9.36	9.21	8.91		8.68	8.33	8.20	7.56	7.38	7.19	8.29		9.43	8.63	7.70
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.5	158.5				

2020 All Japan Corporate Championships (Kumagaya, JPN)

FINAL date 20-Sep-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	6.04	9.71	13.48	17.32	21.25		25.34	29.73	34.23	38.92	43.69		49.38	6 / 1			
reaction time	0.196	interval		3.67	3.77	3.84	3.93		4.09	4.39	4.50	4.69	4.77	5.69			11.28	12.41	13.96
		velocity	7.45	9.54	9.28	9.11	8.91		8.56	7.97	7.78	7.46	7.34	7.03	8.10		9.31	8.46	7.52
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				
Oda, Masaya (JPN) (1995)		time	6.12	9.94	13.78	17.81	21.94		26.31	30.71	35.24	39.86	44.63		50.18	5 / 2			
reaction time	0.222	interval		3.82	3.84	4.03	4.13		4.37	4.40	4.53	4.62	4.77	5.55			11.69	12.90	13.92
		velocity	7.35	9.16	9.11	8.68	8.47		8.01	7.95	7.73	7.58	7.34	7.21	7.97		8.98	8.14	7.54
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Toyoda, Masaki (JPN) (1998)		time	6.22	10.16	14.18	18.42	22.66		26.91	31.10	35.64	40.34	45.05		50.63	7 / 3			
reaction time	0.242	interval		3.94	4.02	4.24	4.24		4.25	4.19	4.54	4.70	4.71	5.58			12.20	12.68	13.95
		velocity	7.23	8.88	8.71	8.25	8.25		8.24	8.35	7.71	7.45	7.43	7.17	7.90		8.61	8.28	7.53
H1 lead leg		strides		14	14	14	14		14	14	15	15	15		129				
Yamada, Atsushi (JPN) (1991		time	6.10	10.04	14.07	18.23	22.52		26.89	31.38	36.00	40.71	45.55		50.94	4 / 4			
reaction time	0.202	interval		3.94	4.03	4.16	4.29		4.37	4.49	4.62	4.71	4.84	5.39			12.13	13.15	14.17
		velocity	7.38	8.88	8.68	8.41	8.16		8.01	7.80	7.58	7.43	7.23	7.42	7.85		8.66	7.98	7.41
H1 lead leg		strides		14	14	14	14		14	14	15	15	15		129				
Matsushita, Yuki (JPN) (1991		time	6.22	10.03	13.95	17.93	22.11		26.48	31.05	35.79	40.57	45.40		50.97	9 / 5			
reaction time	0.209	interval		3.81	3.92	3.98	4.18		4.37	4.57	4.74	4.78	4.83	5.57			11.71	13.12	14.35
		velocity	7.23	9.19	8.93	8.79	8.37		8.01	7.66	7.38	7.32	7.25	7.18	7.85		8.97	8.00	7.32
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Nozawa, Keisuke (JPN) (1991		time	6.21	10.11	14.18	18.30	22.59		26.91	31.41	36.00	40.66	45.48		51.03	3 / 6			
reaction time	0.225	interval		3.90	4.07	4.12	4.29		4.32	4.50	4.59	4.66	4.82	5.55			12.09	13.11	14.07
		velocity	7.25	8.97	8.60	8.50	8.16		8.10	7.78	7.63	7.51	7.26	7.21	7.84		8.68	8.01	7.46
H1 lead leg		strides		14	14	14	14		14	14	15	15	15		129				
Kajiki, Ryo (JPN) (1995)		time	6.14	9.99	13.95	18.02	22.24		26.66	31.13	35.89	40.86	46.01		51.89	8 / 7			
reaction time	0.258	interval		3.85	3.96	4.07	4.22		4.42	4.47	4.76	4.97	5.15	5.88			11.88	13.11	14.88
		velocity	7.33	9.09	8.84	8.60	8.29		7.92	7.83	7.35	7.04	6.80	6.80	7.71		8.84	8.01	7.06
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				
Inoue, Kakeru (JPN) (1996)		time	6.17	10.06	14.00	18.07	22.41		26.88	31.61	36.54	41.66	46.93		53.05	2 / 8			
reaction time	0.220	interval		3.89	3.94	4.07	4.34		4.47	4.73	4.93	5.12	5.27	6.12			11.90	13.54	15.32
		velocity	7.29	9.00	8.88	8.60	8.06		7.83	7.40	7.10	6.84	6.64	6.54	7.54		8.82	7.75	6.85
H1 lead leg		strides		13	13	13	14		14	15	15	15	15		127				

2020 Golden Gala Pietro Mennea (Rome, ITA) (TV Analysis)

FINAL date 17-Sep-20

Henson (2020) - Athlete First: 2020 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.64	9.24	12.95	16.75	20.65	22.3	24.66	28.80	33.07	37.47	41.91		47.07	7 / 1			
reaction time	0.158	interval		3.60	3.71	3.80	3.90		4.01	4.14	4.27	4.40	4.44	5.16			11.11	12.05	13.11
		velocity	7.98	9.72	9.43	9.21	8.97	8.97	8.73	8.45	8.20	7.95	7.88	7.75	8.50		9.45	8.71	8.01
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
Valliant, Ludvy (FRA) (1995)		time	5.87	9.58			21.15	22.9		29.53	33.90	38.54	43.28		48.69	6 / 2			
reaction time	0.185	interval		3.71			11.57			8.38	4.37	4.64	4.74	5.41					13.75
		velocity	7.67	9.43			9.08	8.73		8.35	8.01	7.54	7.38	7.39	8.22				7.64
H1 lead leg	R	strides	21	13							14	14	14	17.2	93.2				
Mägi, Rasmus (EST) (1992)		time	5.97	9.74			21.45	23.2		29.96	34.43	38.94	43.51		48.72	4 / 3			
reaction time	0.150	interval		3.77			11.71			8.51	4.47	4.51	4.57	5.21					13.55
		velocity	7.54	9.28			8.97	8.62		8.23	7.83	7.76	7.66	7.68	8.21				7.75
H1 lead leg	R	strides	20	13							14	14	14	17.5	92.5				
Kendziera, David (USA) (199		time	5.81	9.58	13.35	17.25	21.25	23.0	25.36	29.73	34.30	39.04	43.84		49.35	9 / 4			
reaction time	0.172	interval		3.77	3.77	3.90	4.00		4.11	4.37	4.57	4.74	4.80	5.51			11.44	12.48	14.11
		velocity	7.75	9.28	9.28	8.97	8.75	8.70	8.52	8.01	7.66	7.38	7.29	7.26	8.11		9.18	8.41	7.44
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	15	18.2	159.2				
Happio, Wilfried (FRA) (1998		time	5.91	9.71			21.59	23.4		30.10	34.53	39.21	44.01		49.65	5 / 5			
reaction time	0.166	interval		3.80			11.88			8.51	4.43	4.68	4.80	5.64					13.91
		velocity	7.61	9.21			8.84	8.55		8.23	7.90	7.48	7.29	7.09	8.06				7.55
H1 lead leg	L	strides	20	13							14	15	15	17.5	94.5				

Lambrughi, Mario (ITA) (199		time	5.94	9.74			21.79	23.6		30.46	35.03	39.74	44.54		49.87	2 / 6			
reaction time	0.136	interval		3.80			12.05			8.67	4.57	4.71	4.80	5.33					14.08
		velocity	7.58	9.21			8.71	8.47		8.07	7.66	7.43	7.29	7.50	8.02				7.46
H1 lead leg	R	strides	22	14								15	15	15	18.5				
Preis, Constantin (GER) (19		time	6.24	10.14			22.36	24.2		31.06	35.53	40.14	44.74		49.91	1 / 7			
reaction time	0.250	interval		3.90			12.22			8.70	4.47	4.61	4.60	5.17					13.68
		velocity	7.21	8.97			8.59	8.26		8.05	7.83	7.59	7.61	7.74	8.01				7.68
H1 lead leg	R	strides	22	14							15	15	15	18	99				
Smidt, Nick (NED) (1997)		time	5.91	9.81			22.05	24.0		31.06	35.67	40.34	45.11		50.67	3 / 8			
reaction time	0.144	interval		3.90			12.24			9.01	4.61	4.67	4.77	5.56					14.05
		velocity	7.61	8.97			8.58	8.33		7.77	7.59	7.49	7.34	7.19	7.89				7.47
H1 lead leg	L	strides	20	13							14	14	14	17.2	92.2				
Teles, Marcio (BRA) (1994)		time	6.04	9.91	13.81	17.75	21.95	23.8		30.73	35.27	40.00	44.95		51.04	8 / 9			
reaction time	0.150	interval		3.87	3.90	3.94	4.20			8.78	4.54	4.73	4.95	6.09			11.71	12.98	14.22
		velocity	7.45	9.04	8.97	8.88	8.33	8.40		7.97	7.71	7.40	7.07	6.57	7.84		8.97	8.09	7.38
H1 lead leg	L	strides	23	14	14	14	14				15	15	15	18.5	142.5				

2020 Chinese National Championships (Shaoxing, CHN)

FINAL date 17-Sep-20

CAA Hurdle Development (2020)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Feng Zhiqiang (CHN) (1998)		time	5.92	9.64	13.58	17.62	21.79		26.16	30.50	35.17	39.96	44.87		50.43	6 / 1			
reaction time		interval		3.72	3.94	4.04	4.17		4.37	4.34	4.67	4.79	4.91	5.56			11.70	12.88	14.37
		velocity	7.60	9.41	8.88	8.66	8.39		8.01	8.06	7.49	7.31	7.13	7.19	7.93		8.97	8.15	7.31
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	15	17	158				
Shang Shou (CHN) (1995)		time	6.21	10.17	14.29	18.46	22.75		27.21	31.58	36.08	40.67	45.25		50.65	4 / 2			
reaction time		interval		3.96	4.12	4.17	4.29		4.46	4.37	4.50	4.59	4.58	5.40			12.25	13.12	13.67
		velocity	7.25	8.84	8.50	8.39	8.16		7.85	8.01	7.78	7.63	7.64	7.41	7.90		8.57	8.00	7.68
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Wang Hongwen (CHN) (200		time	6.08	10.08	14.08	18.25	22.54		26.96	31.42	36.00	40.75	45.58		51.15	7 / 3			
reaction time		interval		4.00	4.00	4.17	4.29		4.42	4.46	4.58	4.75	4.83	5.57			12.17	13.17	14.16
		velocity	7.40	8.75	8.75	8.39	8.16		7.92	7.85	7.64	7.37	7.25	7.18	7.82		8.63	7.97	7.42
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18	168				
Lin Zhikai (CHN) (2001)		time	6.08	10.21	14.29	18.42	22.75		27.21	31.75	36.42	41.08	45.87		51.33	3 / 4			
reaction time		interval		4.13	4.08	4.13	4.33		4.46	4.54	4.67	4.66	4.79	5.46			12.34	13.33	14.12
		velocity	7.40	8.47	8.58	8.47	8.08		7.85	7.71	7.49	7.51	7.31	7.33	7.79		8.51	7.88	7.44
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18	175				
Wang Daojun (CHN) (2000)		time	5.96	10.00	14.08	18.29	22.58		26.92	31.42	35.96	40.71	45.54		51.41	5 / 5			
reaction time		interval		4.04	4.08	4.21	4.29		4.34	4.50	4.54	4.75	4.83	5.87			12.33	13.13	14.12
		velocity	7.55	8.66	8.58	8.31	8.16		8.06	7.78	7.71	7.37	7.25	6.81	7.78		8.52	8.00	7.44
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.5	170.5				
Yang Baichuan (CHN) (1995)		time	6.08	10.12	14.25	18.50	22.83		27.25	31.75	36.42	41.12	45.92		51.58	2 / 6			
reaction time		interval		4.04	4.13	4.25	4.33		4.42	4.50	4.67	4.70	4.80	5.66			12.42	13.25	14.17
		velocity	7.40	8.66	8.47	8.24	8.08		7.92	7.78	7.49	7.45	7.29	7.07	7.75		8.45	7.92	7.41
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	20	178				
Wang Siqing (CHN) (1999)		time	6.25		14.67	19.04	23.50		28.12	32.79	37.75	42.50	47.50		53.38	1 / 7			
reaction time		interval			8.42	4.37	4.46		4.62	4.67	4.96	4.75	5.00	5.88			12.79	13.75	14.71
		velocity	7.20		8.31	8.01	7.85		7.58	7.49	7.06	7.37	7.00	6.80	7.49		8.21	7.64	7.14
H1 lead leg	L	strides	22			15	15		15	16	16	16	16	19	150				
Cao Xiong (CHN) (2001)		time	6.05	10.17	14.37	18.66	23.12		27.79	32.62	37.62		48.08		53.96	8 / 8			
reaction time		interval		4.12	4.20	4.29	4.46		4.67	4.83	5.00		10.46	5.88			12.61	13.96	15.46
		velocity	7.44	8.50	8.33	8.16	7.85		7.49	7.25	7.00		6.69	6.80	7.41		8.33	7.52	6.79
H1 lead leg	L	strides		15	15	15	15		15	15	16			18.5	125				

2020 ISTAF (Berlin, GER) (TV Analysis)

FINAL date 13-Sep-20

Henson (2020) - Athlete First: 2020 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.64	9.24	12.88	16.64	20.56		24.56	28.68	32.92	37.24	41.88		47.08	7 / 1			
reaction time	0.190	interval		3.60	3.64	3.76	3.92		4.00	4.12	4.24	4.32	4.64	5.20			11.00	12.04	13.20
		velocity	7.98	9.72	9.62	9.31	8.93		8.75	8.50	8.25	8.10	7.54	7.69	8.50		9.55	8.72	7.95
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
Mägi, Rasmus (EST) (1992)		time	6.00		13.52	17.40			25.60	29.92	34.36	38.92	43.72		49.22	6 / 2			
reaction time	0.238	interval			7.52	3.88			8.20	4.32	4.44	4.56	4.80	5.50			11.40	12.52	13.80
		velocity	7.50		9.31	9.02			8.54	8.10	7.88	7.68	7.29	7.27	8.13		9.21	8.39	7.61
H1 lead leg	R	strides	20			13				13	14	14	14		88				
Kendziera, David (USA) (199		time	5.88		13.56	17.40			25.60	29.96	34.52	39.32	44.36		50.28	4 / 3			
reaction time	0.198	interval			7.68	3.84			8.20	4.36	4.56	4.80	5.04	5.92			11.52	12.56	14.40
		velocity	7.65		9.11	9.11			8.54	8.03	7.68	7.29	6.94	6.76	7.96		9.11	8.36	7.29

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	L	strides	21			13				14	15	15		78				
Barr, Thomas (IRL) (1992)		time	6.08		13.76	17.72		26.12	30.64	35.20	40.04			50.41	3 / 4			
reaction time	0.179	interval			7.68	3.96		8.40	4.52	4.56	4.84					11.64	12.92	
		velocity	7.40		9.11	8.84		8.33	7.74	7.68	7.23			7.93		9.02	8.13	
H1 lead leg	L	strides	21			13				14	15			63				
Müller, Vít (CZE) (1996)		time	6.12		13.72	17.56		25.76		35.16	40.00			50.47	2 / 5			
reaction time	0.204	interval			7.60	3.84		8.20		9.40	4.84					11.44		
		velocity	7.35		9.21	9.11		8.54		7.45	7.23			7.93		9.18		
H1 lead leg	L	strides	21			13					15			49				
McAlister, Chris (GBR) (1999		time	6.24		14.28	18.44	22.64	26.88		35.84	40.56			51.03	1 / 6			
reaction time	0.188	interval			8.04	4.16	4.20	4.24		8.96	4.72					12.20		
		velocity	7.21		8.71	8.41	8.33	8.25		7.81	7.42			7.84		8.61		
H1 lead leg	R	strides	22			15		15			15			67				
Angela, Ramsey (NED) (1999		time	5.96	9.84	13.68	17.72	22.00	26.36	30.88	35.52	40.36			51.25	8 / 7			
reaction time	0.195	interval		3.88	3.84	4.04	4.28	4.36	4.52	4.64	4.84					11.76	13.16	
		velocity	7.55	9.02	9.11	8.66	8.18	8.03	7.74	7.54	7.23			7.80		8.93	7.98	
H1 lead leg	R	strides	22	14	14	14	14	15	15		14			122				
Preis, Constantin (GBR) (19		time	6.04		13.92	17.88		26.20						dnf	5 / --			
reaction time	0.240	interval			7.88	3.96		8.32								11.84		
		velocity	7.45		8.88	8.84		8.41								8.87		
H1 lead leg	L	strides	22			14								36				

2020 Golden Spike (Ostrava, CZE) (TV Analysis)

FINAL date 08-Sep-20

Henson (2020) - Athlete First: 2020 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.77	9.37	13.05	16.82	20.65		24.69	28.89	33.13	37.77	42.37		47.62	8 / 1			
reaction time	0.168	interval		3.60	3.68	3.77	3.83		4.04	4.20	4.24	4.64	4.60	5.25			11.05	12.07	13.48
		velocity	7.80	9.72	9.51	9.28	9.14		8.66	8.33	8.25	7.54	7.61	7.62	8.40		9.50	8.70	7.79
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Valliant, Ludvy (FRA) (1995)		time	5.97	9.71		17.41	21.35		25.49	29.83		38.94	43.68		49.14	6 / 2			
reaction time	0.192	interval		3.74		7.70	3.94		4.14	4.34		9.11	4.74	5.46			11.44	12.42	13.85
		velocity	7.54	9.36		9.09	8.88		8.45	8.06		7.68	7.38	7.33	8.14		9.18	8.45	7.58
H1 lead leg	R	strides	21	13			13			14			14	17.7	92.7				
Müller, Vít (CZE) (1996)		time	6.04	9.88		17.52	21.49			30.03	34.87	39.64	44.51		50.18	5 / 3			
reaction time	0.177	interval		3.84		7.64	3.97			8.54	4.84	4.77	4.87	5.67			11.48	12.51	14.48
		velocity	7.45	9.11		9.16	8.82			8.20	7.23	7.34	7.19	7.05	7.97		9.15	8.39	7.25
H1 lead leg	L	strides	21	13			13					15	15		77				
Baluch, Matej (SVK) (2000)		time	6.00	9.78		17.55	21.55			30.26	35.13	40.07	45.14		50.74	4 / 4			
reaction time	0.154	interval		3.78		7.77	4.00			8.71	4.87	4.94	5.07	5.60	**=PB**		11.55	12.71	14.88
		velocity	7.50	9.26		9.01	8.75			8.04	7.19	7.09	6.90	7.14	7.88		9.09	8.26	7.06
H1 lead leg	R	strides	23	15			15					17	17		87				
Kučera, Martin (SVK) (1990)		time	6.17	10.08	14.11	18.12	22.25		26.59	31.06	35.90	40.57			50.84	7 / 5			
reaction time	0.185	interval		3.91	4.03	4.01	4.13		4.34	4.47	4.84	4.67					11.95	12.94	
		velocity	7.29	8.95	8.68	8.73	8.47		8.06	7.83	7.23	7.49			7.87		8.79	8.11	
H1 lead leg	R	strides	20	13		13	13			14		14			87				
Mikołajewski, Gabriel (POL) (		time	6.14	10.04	14.14	18.12				31.13	35.97	40.84			51.42	3 / 6			
reaction time	0.145	interval		3.90	4.10	3.98				13.01	4.84	4.87					11.98	13.01	
		velocity	7.33	8.97	8.54	8.79				8.07	7.23	7.19			7.78		8.76	8.07	
H1 lead leg	L	strides	21	14		14	14					15			78				
Juránek, Martin (CZE) (1991)		time	6.10	10.04	13.98	17.95	22.09			30.63	35.30	40.24			51.71	2 / 7			
reaction time	0.166	interval		3.94	3.94	3.97	4.14			8.54	4.67	4.94					11.85	12.68	
		velocity	7.38	8.88	8.88	8.82	8.45			8.20	7.49	7.09			7.74		8.86	8.28	
H1 lead leg	L	strides	22	15		15	15					17	17		101				

2020 World Athletics Trials (Fuji, JPN)

Final date 06-Sep-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Toyoda, Masaki (JPN) (1998)		time	6.09	9.96	13.91	18.07	22.17		26.38	30.56	34.93	39.52	44.23		49.63	/ 1			
reaction time		interval		3.87	3.95	4.16	4.10		4.21	4.18	4.37	4.59	4.71	5.40			11.98	12.49	13.67
		velocity	7.39	9.04	8.86	8.41	8.54		8.31	8.37	8.01	7.63	7.43	7.41	8.06		8.76	8.41	7.68
H1 lead leg		strides		14	14	14	14		14	14	15	15	15		129				
Obayashi, Masayuki (JPN) (1		time	5.96	9.86	13.85	18.00	22.12		26.36	30.63	35.02	39.62	44.53		50.22	/ 2			
reaction time		interval		3.90	3.99	4.15	4.12		4.24	4.27	4.39	4.60	4.91	5.69			12.04	12.63	13.90
		velocity	7.55	8.97	8.77	8.43	8.50		8.25	8.20	7.97	7.61	7.13	7.03	7.96		8.72	8.31	7.55
H1 lead leg		strides		14	14	14	15		15	15	15	15	15		132				
Takada, Kazunari (JPN) (199		time	6.04	9.81	13.71	17.77	21.92		26.16	30.56	35.14	39.94	45.10		51.11	/ 3			

reaction time		interval		3.77	3.90	4.06	4.15		4.24	4.40	4.58	4.80	5.16	6.01			11.73	12.79	14.54
		velocity	7.45	9.28	8.97	8.62	8.43		8.25	7.95	7.64	7.29	6.78	6.66	7.83		8.95	8.21	7.22
H1 lead leg		strides		13	13	14	14		14	14	15	15	16		128				

B Final

date 06-Sep-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Yoshida, Kyohei (JPN) (1997		time	6.01	9.84	13.75	17.80	21.94		26.21	30.58	35.22	39.97	44.79		50.32	5 / 1			
reaction time		interval		3.83	3.91	4.05	4.14		4.27	4.37	4.64	4.75	4.82	5.53			11.79	12.78	14.21
		velocity	7.49	9.14	8.95	8.64	8.45		8.20	8.01	7.54	7.37	7.26	7.23	7.95		8.91	8.22	7.39
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	19	169				
Iwamoto, Takeshi (JPN) (199		time	6.14	9.98	13.93	17.92	22.09		26.36	30.83	35.41	40.32	45.28		50.56	4 / 2			
reaction time		interval		3.84	3.95	3.99	4.17		4.27	4.47	4.58	4.91	4.96	5.28			11.78	12.91	14.45
		velocity	7.33	9.11	8.86	8.77	8.39		8.20	7.83	7.64	7.13	7.06	7.58	7.91		8.91	8.13	7.27
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	16.2	155.2				
Ina, Sota (JPN) (2000)		time	6.24	10.26	14.18	18.28	22.51		26.78	31.18	35.84	40.59	45.33		50.67	7 / 3			
reaction time		interval		4.02	3.92	4.10	4.23		4.27	4.40	4.66	4.75	4.74	5.34			12.04	12.90	14.15
		velocity	7.21	8.71	8.93	8.54	8.27		8.20	7.95	7.51	7.37	7.38	7.49	7.89		8.72	8.14	7.42
H1 lead leg	R	strides	21	13	13	14	14		14	14	15	15	15	18	166				
Inoue, Kakeru (JPN) (1996)		time	6.12	10.01	13.96	18.03	22.17		26.43	30.86	35.49	40.31	45.31		51.11	6 / 4			
reaction time		interval		3.89	3.95	4.07	4.14		4.26	4.43	4.63	4.82	5.00	5.80			11.91	12.83	14.45
		velocity	7.35	9.00	8.86	8.60	8.45		8.22	7.90	7.56	7.26	7.00	6.90	7.83		8.82	8.18	7.27
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.7	164.7				
Yamamoto, Takeshi (JPN) (1		time	6.09	9.96	13.91	17.95	22.09		26.38	30.75	35.30	40.16	45.40		51.44	3 / 5			
reaction time		interval		3.87	3.95	4.04	4.14		4.29	4.37	4.55	4.86	5.24	6.04			11.86	12.80	14.65
		velocity	7.39	9.04	8.86	8.66	8.45		8.16	8.01	7.69	7.20	6.68	6.62	7.78		8.85	8.20	7.17
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	17	20	175				

2020 Bauhaus Galan (Stockholm, SWE) (TV Analysis)

FINAL

date 23-Aug-20

Henson (2020) - Athlete First: 2020 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.58	9.14	12.80	16.60	20.44	22.2	24.42	28.48	32.64	36.94	41.48		46.87	8 / 1			
reaction time	0.161	interval		3.56	3.66	3.80	3.84		3.98	4.06	4.16	4.30	4.54	5.39	**AR PB**		11.02	11.88	13.00
		velocity	8.06	9.83	9.56	9.21	9.11	9.01	8.79	8.62	8.41	8.14	7.71	7.42	8.53		9.53	8.84	8.08
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
Happio, Wilfried (FRA) (1998		time	5.86		13.48	17.44	21.40	23.2	25.54		34.36	38.94	43.64		49.14	5 / 2			
reaction time	0.141	interval			7.62	3.96	3.96		4.14		8.82	4.58	4.70	5.50			11.58		
		velocity	7.68		9.19	8.84	8.84	8.62	8.45		7.94	7.64	7.45	7.27	8.14		9.07		
H1 lead leg	L	strides	20	13		13	13		13			15	15	18.5	120.5				
Valliant, Ludvy (FRA) (1995)		time	5.86		13.58	17.68	21.90	23.7	26.14		34.86	39.36	43.92		49.18	3 / 3			
reaction time	0.169	interval			7.72	4.10	4.22		4.24		8.72	4.50	4.56	5.26			11.82		
		velocity	7.68		9.07	8.54	8.29	8.44	8.25		8.03	7.78	7.68	7.60	8.13		8.88		
H1 lead leg	R	strides	21	13		13	14		14		14	14	14	17	134				
Mägi, Rasmus (EST) (1992)		time	5.98		13.68	17.62	21.60	23.4	25.76		34.72	39.32	43.98		49.40	4 / 4			
reaction time	0.159	interval			7.70	3.94	3.98		4.16		8.96	4.60	4.66	5.42			11.64		
		velocity	7.53		9.09	8.88	8.79	8.55	8.41		7.81	7.61	7.51	7.38	8.10		9.02		
H1 lead leg	L	strides	20	13		13	13		13			14	14	17.2	117.2				
Kendziera, David (USA) (199		time	5.68	9.46	13.30	17.28	21.34	23.1	25.50	29.78	34.24	38.94	43.68		49.47	7 / 5			
reaction time	0.170	interval		3.78	3.84	3.98	4.06		4.16	4.28	4.46	4.70	4.74	5.79			11.60	12.50	13.90
		velocity	7.92	9.26	9.11	8.79	8.62	8.66	8.41	8.18	7.85	7.45	7.38	6.91	8.09		9.05	8.40	7.55
H1 lead leg	R	strides		13	13	13	13		13		13	14	14	18.5	124.5				
Preis, Constantin (GER) (19		time	6.10		13.96	18.02	22.12	23.9	26.32		35.44	40.12	44.80		50.13	2 / 6			
reaction time	0.232	interval			7.86	4.06	4.10		4.20		9.12	4.68	4.68	5.33			11.92		
		velocity	7.38		8.91	8.62	8.54	8.37	8.33		7.68	7.48	7.48	7.50	7.98		8.81		
H1 lead leg	L	strides	21			14	14		14			15	15	18	111				
Bengström, Carl (SWE) (200		time	5.82		13.90	17.96	22.18	24.0	26.50	30.92	35.50	40.20	44.94		50.21	6 / 7			
reaction time	0.187	interval			8.08	4.06	4.22		4.32	4.42	4.58	4.70	4.74	5.27			12.14	12.96	14.02
		velocity	7.73		8.66	8.62	8.29	8.33	8.10	7.92	7.64	7.45	7.38	7.59	7.97		8.65	8.10	7.49
H1 lead leg	L	strides	21	14		14	14		15		15	15	15		123				
Angela, Ramsey (NED) (1999		time	6.16		13.90	17.94	22.12	24.0	26.44		35.58	40.42	45.50		51.90	1 / 8			
reaction time	0.210	interval			7.74	4.04	4.18		4.32		9.14	4.84	5.08	6.40			11.78		
		velocity	7.31		9.04	8.66	8.37	8.33	8.10		7.66	7.23	6.89	6.25	7.71		8.91		
H1 lead leg	R	strides	21	14		14	14		15			15	16		109				

2020 Seiko Golden Grand Prix (Tokyo, JPN)

FINAL

date 23-Aug-20

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2020 season

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	5.96	9.64	13.36	17.20	21.12		25.23	29.58	34.08	38.79	43.66		49.31	6 / 1			
reaction time	0.150	interval		3.68	3.72	3.84	3.92		4.11	4.35	4.50	4.71	4.87	5.65			11.24	12.38	14.08

		velocity	7.55	9.51	9.41	9.11	8.93	8.52	8.05	7.78	7.43	7.19	7.08	8.11		9.34	8.48	7.46
H1 lead leg		strides		13	13	13	13	13	14	14	15	15		123				
Toyoda, Masaki (JPN) (1998)		time	6.01	9.91	13.85	17.90	21.97	26.21	30.46	34.83	39.52	44.29		49.82	5 / 2			
reaction time	0.146	interval		3.90	3.94	4.05	4.07	4.24	4.25	4.37	4.69	4.77	5.53			11.89	12.56	13.83
		velocity	7.49	8.97	8.88	8.64	8.60	8.25	8.24	8.01	7.46	7.34	7.23	8.03		8.83	8.36	7.59
H1 lead leg		strides		14	14	14	14	14	14	15	15	15		129				
Yamamoto, Tatsuhiro (JPN)		time	6.01	9.86	13.80	17.77	21.87	26.16	30.61	35.17	39.92	44.79		50.34	4 / 3			
reaction time	0.137	interval		3.85	3.94	3.97	4.10	4.29	4.45	4.56	4.75	4.87	5.55			11.76	12.84	14.18
		velocity	7.49	9.09	8.88	8.82	8.54	8.16	7.87	7.68	7.37	7.19	7.21	7.95		8.93	8.18	7.40
H1 lead leg		strides		14	14	14	14	15	15	15	15	15		131				
Takada, Kazunari (JPN) (199		time	6.04	9.84	13.71	17.67	21.86	26.13	30.53	35.07	39.87	44.84		50.53	2 / 4			
reaction time	0.191	interval		3.80	3.87	3.96	4.19	4.27	4.40	4.54	4.80	4.97	5.69			11.63	12.86	14.31
		velocity	7.45	9.21	9.04	8.84	8.35	8.20	7.95	7.71	7.29	7.04	7.03	7.92		9.03	8.16	7.34
H1 lead leg		strides		13	13	14	14	14	14	15	15	15		127				
Matsushita, Yuki (JPN) (1991		time	6.14	9.91	13.78	17.82	22.01	26.36	30.83	35.42	40.09	44.89		50.60	7 / 5			
reaction time	0.147	interval		3.77	3.87	4.04	4.19	4.35	4.47	4.59	4.67	4.80	5.71			11.68	13.01	14.06
		velocity	7.33	9.28	9.04	8.66	8.35	8.05	7.83	7.63	7.49	7.29	7.01	7.91		8.99	8.07	7.47
H1 lead leg		strides		13	13	13	13	14	14	15	15	15		125				
Oda, Masaya (JPN) (1995)		time	6.01	9.76	13.56	17.57	21.77	26.08	30.51	35.14	39.92	45.05		50.73	9 / 6			
reaction time	0.159	interval		3.75	3.80	4.01	4.20	4.31	4.43	4.63	4.78	5.13	5.68			11.56	12.94	14.54
		velocity	7.49	9.33	9.21	8.73	8.33	8.12	7.90	7.56	7.32	6.82	7.04	7.88		9.08	8.11	7.22
H1 lead leg		strides		14	14	14	14	14	14	15	15	16		130				
Suguimati, Mahau (BRA) (19		time	6.16	9.96	13.86	17.83	21.91	26.16	30.51	35.15	40.04	45.08		50.99	8 / 7			
reaction time	0.152	interval		3.80	3.90	3.97	4.08	4.25	4.35	4.64	4.89	5.04	5.91			11.67	12.68	14.57
		velocity	7.31	9.21	8.97	8.82	8.58	8.24	8.05	7.54	7.16	6.94	6.77	7.84		9.00	8.28	7.21
H1 lead leg		strides		12	12	13	13	13	13	13	14	14		117				
Kawagoe, Hiroya (JPN) (1997		time	5.92	9.76	13.65	17.63	21.74	26.01	30.38	34.87	39.56	44.93		52.17	3 / 8			
reaction time	0.142	interval		3.84	3.89	3.98	4.11	4.27	4.37	4.49	4.69	5.37	7.24			11.71	12.75	14.55
		velocity	7.60	9.11	9.00	8.79	8.52	8.20	8.01	7.80	7.46	6.52	5.52	7.67		8.97	8.24	7.22
H1 lead leg		strides		14	14	14	14	15	15	15	15	17		133				
Suzuki, Taiga (JPN) (2002)		time	6.01	9.86	13.78	17.85	22.02	26.44	31.05	35.79	40.74	45.90		52.19	1 / 9			
reaction time	0.152	interval		3.85	3.92	4.07	4.17	4.42	4.61	4.74	4.95	5.16	6.29			11.84	13.20	14.85
		velocity	7.49	9.09	8.93	8.60	8.39	7.92	7.59	7.38	7.07	6.78	6.36	7.66		8.87	7.95	7.07
H1 lead leg		strides		14	14	14	14	15	15	15	15	15		131				

2020 Herculis Meeting International d'Athletisme (Monaco, MON) (TV Analysis)

FINAL date 14-Aug-20

Henson (2020) - Athlete First: 2020 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.60	9.27	13.11	16.98	20.92		25.02	29.23	33.47	37.80	42.17		47.10	7 / 1			
reaction time	0.132	interval		3.67	3.84	3.87	3.94		4.10	4.21	4.24	4.33	4.37	4.93			11.38	12.25	12.94
		velocity	8.04	9.54	9.11	9.04	8.88		8.54	8.31	8.25	8.08	8.01	8.11	8.49		9.23	8.57	8.11
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	13	17	154				
Copello, Yasmani (TUR) (198		time	5.81	9.44	13.25	17.15	21.12		25.25	29.63	34.07	38.67	43.44		49.04	5 / 2			
reaction time	0.192	interval		3.63	3.81	3.90	3.97		4.13	4.38	4.44	4.60	4.77	5.60			11.34	12.48	13.81
		velocity	7.75	9.64	9.19	8.97	8.82		8.47	7.99	7.88	7.61	7.34	7.14	8.16		9.26	8.41	7.60
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	18	159				
Mägi, Rasmus (EST) (1992)		time	6.00	9.74	13.61	17.55			25.79	30.16	34.60	39.24	43.88		49.23	4 / 3			
reaction time	0.146	interval		3.74	3.87	3.94			8.24	4.37	4.44	4.64	4.64	5.35			11.55	12.61	13.72
		velocity	7.50	9.36	9.04	8.88			8.50	8.01	7.88	7.54	7.54	7.48	8.13		9.09	8.33	7.65
H1 lead leg	L	strides	21	13	13	13				14	14	14	14	17.2	133.2				
Valliant, Ludvy (FRA) (1995)		time	5.84	9.47	13.35	17.32	21.39		25.66	30.06	34.53	39.20	43.98		49.35	6 / 4			
reaction time	0.173	interval		3.63	3.88	3.97	4.07		4.27	4.40	4.47	4.67	4.78	5.37			11.48	12.74	13.92
		velocity	7.71	9.64	9.02	8.82	8.60		8.20	7.95	7.83	7.49	7.32	7.45	8.11		9.15	8.24	7.54
H1 lead leg	R	strides	21	13	13	13	13		14	14	14	14	14		143				
Preis, Constantin (GER) (199		time	6.00	9.81	13.71	17.75	21.92		26.26	30.76	35.27	39.87	44.44		49.49	8 / 5			
reaction time	0.251	interval		3.81	3.90	4.04	4.17		4.34	4.50	4.51	4.60	4.57	5.05			11.75	13.01	13.68
		velocity	7.50	9.19	8.97	8.66	8.39		8.06	7.78	7.76	7.61	7.66	7.92	8.08		8.94	8.07	7.68
H1 lead leg	L	strides	22	14	14	14	14		15	15	15		15		138				

2020 Shimane High School Championships (Honshu, JPN)

FINAL date 12-Jul-20

Shimizu (2020) - shimane high school championships 2020 - biomechanics data analysis

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
森田 光典	time	6.45	10.75	15.08	19.47	23.95		28.50	33.23	38.18	43.60	49.10		55.31	5 / 1			
reaction time	interval		4.30	4.33	4.39	4.48		4.55	4.73	4.95	5.42	5.50	6.21			13.02	13.76	15.87
	velocity	6.98	8.14	8.08	7.97	7.81		7.69	7.40	7.07	6.46	6.36	6.44	7.23		8.06	7.63	6.62
H1 lead leg	strides	22	15	15	15	15		15	15	15	17	17	21	182				

山根 悠介	time	6.42	10.65	15.03	19.52	24.12		28.87	33.85	39.18	44.57	50.08		56.41	7 / 2			
reaction time	interval		4.23	4.38	4.49	4.60		4.75	4.98	5.33	5.39	5.51	6.33			13.10	14.33	16.23
	velocity	7.01	8.27	7.99	7.80	7.61		7.37	7.03	6.57	6.49	6.35	6.32	7.09		8.02	7.33	6.47
H1 lead leg	strides	22	15	15	15	15		15	15	16	16	17	20.7	181.7				
新田 貴也	time	6.67	11.23	15.93	20.80	25.80		30.80	35.95	41.33	47.13	53.07		59.62	4 / 3			
reaction time	interval		4.56	4.70	4.87	5.00		5.00	5.15	5.38	5.80	5.94	6.55			14.13	15.15	17.12
	velocity	6.75	7.68	7.45	7.19	7.00		7.00	6.80	6.51	6.03	5.89	6.11	6.71		7.43	6.93	6.13
H1 lead leg	strides	24	16	16	17	17		17	17	17	19	19	22.5	201.5				
外野 晴琉	time	6.75	11.37	16.20	21.03	26.10		31.27	36.60	42.37	48.48	54.65		61.63	3 / 4			
reaction time	interval		4.62	4.83	4.83	5.07		5.17	5.33	5.77	6.11	6.17	6.98			14.28	15.57	18.05
	velocity	6.67	7.58	7.25	7.25	6.90		6.77	6.57	6.07	5.73	5.67	5.73	6.49		7.35	6.74	5.82
H1 lead leg	strides	22	15	15	15	15		15	15	17	17	17	20	183				

2020 Impossible Games (Oslo, NOR) (TV Analysis) (300m Hurdles)

FINAL

date 11-Jun-20

Henson (2020) - Athlete First: 2020 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	6.24	9.74	13.38	17.15	21.02		25.02	29.13					33.78	7 / 1			
reaction time	0.182	interval		3.50	3.64	3.77	3.87		4.00	4.11				4.65	**WB PB**		10.91	11.98	
		velocity	8.01	10.00	9.62	9.28	9.04		8.75	8.52				8.60	8.88		9.62	8.76	
H1 lead leg	L	strides	20	13	13	13	13		13	13				16.5	114.5				

2019 National Sports Festival (Hitachinaka, JPN)

FINAL

date 05-Oct-19

Enomoto (2019) - research on athlete performance and technique- 2019 data book

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Oda, Masaya (JPN) (1995)		time	5.96	9.68	13.46	17.40	21.52		25.89	30.26	34.65	39.17	43.91		49.42	6 / 1			
reaction time	0.179	interval		3.72	3.78	3.94	4.12		4.37	4.37	4.39	4.52	4.74	5.51	**PB**		11.44	12.86	13.65
		velocity	7.55	9.41	9.26	8.88	8.50		8.01	8.01	7.97	7.74	7.38	7.26	8.09		9.18	8.16	7.69
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				

2019 IAAF World Championships (Doha, QAT)

FINAL

date 30-Sep-19

Kakehata (2019) - race analysis of men's 400m hurdles 2019 World Championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.75	9.29	12.93	16.68	20.56		24.56	28.68	32.91	37.40	42.01		47.42	4 / 1			
reaction time	0.164	interval		3.54	3.64	3.75	3.88		4.00	4.12	4.23	4.49	4.61	5.41			10.93	12.00	13.33
		velocity	7.83	9.89	9.62	9.33	9.02		8.75	8.50	8.27	7.80	7.59	7.39	8.44		9.61	8.75	7.88
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18.2	157.2				
Benjamin, Rai (USA) (1997)		time	5.78	9.35	13.03	16.83	20.80		24.84	29.01	33.24	37.57	42.15		47.66	7 / 2			
reaction time	0.205	interval		3.57	3.68	3.80	3.97		4.04	4.17	4.23	4.33	4.58	5.51			11.05	12.18	13.14
		velocity	7.79	9.80	9.51	9.21	8.82		8.66	8.39	8.27	8.08	7.64	7.26	8.39		9.50	8.62	7.99
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	17	154				
Samba, Abderrahmane (QAT		time	5.97	9.65	13.40	17.27	21.22		25.29	29.52	33.85	38.30	42.80		48.03	9 / 3			
reaction time	0.198	interval		3.68	3.75	3.87	3.95		4.07	4.23	4.33	4.45	4.50	5.23			11.30	12.25	13.28
		velocity	7.54	9.51	9.33	9.04	8.86		8.60	8.27	8.08	7.87	7.78	7.65	8.33		9.29	8.57	7.91
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	14	14	17.5	156.5				
McMaster, Kyron (IVB) (1997		time	5.75	9.33	13.02	16.78	20.64		24.67	28.85	33.25	37.72	42.49		48.10	2 / 4			
reaction time	0.171	interval		3.58	3.69	3.76	3.86		4.03	4.18	4.40	4.47	4.77	5.61			11.03	12.07	13.64
		velocity	7.83	9.78	9.49	9.31	9.07		8.68	8.37	7.95	7.83	7.34	7.13	8.32		9.52	8.70	7.70
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	18.2	160.2				
Holmes, TJ (USA) (1995)		time	6.00	9.63	13.36	17.08	20.96		25.06	29.34	33.76	38.48	43.10		48.20	3 / 5			
reaction time	0.193	interval		3.63	3.73	3.72	3.88		4.10	4.28	4.42	4.72	4.62	5.10	**PB**		11.08	12.26	13.76
		velocity	7.50	9.64	9.38	9.41	9.02		8.54	8.18	7.92	7.42	7.58	7.84	8.30		9.48	8.56	7.63
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	14	17	157				
Copello, Yasmani (TUR) (198		time	5.87	9.50	13.17	16.94	20.82		24.84	29.08	33.50	37.98	42.75		48.25	6 / 6			
reaction time	0.177	interval		3.63	3.67	3.77	3.88		4.02	4.24	4.42	4.48	4.77	5.50			11.07	12.14	13.67
		velocity	7.67	9.64	9.54	9.28	9.02		8.71	8.25	7.92	7.81	7.34	7.27	8.29		9.49	8.65	7.68
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	15	18	159				
dos Santos, Alison Brendon		time	6.07	9.89	13.77	17.60	21.54		25.55	29.73	33.96	38.39	42.99		48.28	5 / 7			
reaction time	0.208	interval		3.82	3.88	3.83	3.94		4.01	4.18	4.23	4.43	4.60	5.29	**AJR PB**		11.53	12.13	13.26
		velocity	7.41	9.16	9.02	9.14	8.88		8.73	8.37	8.27	7.90	7.61	7.56	8.29		9.11	8.66	7.92
H1 lead leg	L	strides	20	13	13	12	12		13	13	13	14	14	16	153				
Lahoulou, Abdelmalik (ALG)		time	6.02	9.60	13.23	16.96	20.84		24.97	29.36	33.94	38.72	43.67		49.46	8 / 8			
reaction time	0.187	interval		3.58	3.63	3.73	3.88		4.13	4.39	4.58	4.78	4.95	5.79			10.94	12.40	14.31
		velocity	7.48	9.78	9.64	9.38	9.02		8.47	7.97	7.64	7.32	7.07	6.91	8.09		9.60	8.47	7.34
H1 lead leg	L		22	13	13	13	13		14	14	15	15	15	18	165				

Semi-Final 3

date 28-Sep-19

Kakehata (2019) - race analysis of men's 400m hurdles 2019 World Championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.82	9.47	13.24	17.17	21.24		25.38	29.56	33.88	38.32	42.93		48.52	6 / 1			
reaction time	0.215	interval		3.65	3.77	3.93	4.07		4.14	4.18	4.32	4.44	4.61	5.59			11.35	12.39	13.37
		velocity	7.73	9.59	9.28	8.91	8.60		8.45	8.37	8.10	7.88	7.59	7.16	8.24		9.25	8.47	7.85

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	R	strides	20	13	13	13	13	13	13	13	13	13	16.7	153.7				
Samba, Abderrahmane (QAT		time	6.00	9.78	13.51	17.41	21.40	25.57	29.84	34.31	38.76	43.33		48.72	5 / 2			
reaction time	0.220	interval		3.78	3.73	3.90	3.99	4.17	4.27	4.47	4.45	4.57	5.39			11.41	12.43	13.49
		velocity	7.50	9.26	9.38	8.97	8.77	8.39	8.20	7.83	7.87	7.66	7.42	8.21		9.20	8.45	7.78
H1 lead leg	R	strides	21	13	13	13	13	13	13	14	14	14	17.2	158.2				
Abe, Takatoshi (JPN) (1991)		time	5.90	9.63	13.42	17.28	21.31	25.44	29.82	34.30	38.88	43.53		48.97	4 / 3			
reaction time	0.161	interval		3.73	3.79	3.86	4.03	4.13	4.38	4.48	4.58	4.65	5.44			11.38	12.54	13.71
		velocity	7.63	9.38	9.23	9.07	8.68	8.47	7.99	7.81	7.64	7.53	7.35	8.17		9.23	8.37	7.66
H1 lead leg	R	strides	21	13	13	13	13	13	14	14	15	15	18	162				
Barr, Thomas (IRL) (1992)		time	5.87	9.62	13.44	17.31	21.34	25.47	29.85	34.28	38.83	43.51		49.02	7 / 4			
reaction time	0.131	interval		3.75	3.82	3.87	4.03	4.13	4.38	4.43	4.55	4.68	5.51			11.44	12.54	13.66
		velocity	7.67	9.33	9.16	9.04	8.68	8.47	7.99	7.90	7.69	7.48	7.26	8.16		9.18	8.37	7.69
H1 lead leg	L	strides	21	13	13	13	13	13	14	14	14	14	18.2	160.2				
Madari Palliyalil, Jabir (IND) (		time	5.95	9.82	13.69	17.64	21.74	25.92	30.19	34.61	39.24	44.12		49.71	9 / 5			
reaction time	0.199	interval		3.87	3.87	3.95	4.10	4.18	4.27	4.42	4.63	4.88	5.59			11.69	12.55	13.93
		velocity	7.56	9.04	9.04	8.86	8.54	8.37	8.20	7.92	7.56	7.17	7.16	8.05		8.98	8.37	7.54
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	16	16	19.7	178.7				
Vega, Fernando (MEX) (1998		time	5.93	9.78	13.64	17.62	21.62	25.80	30.20	34.68	39.35	44.25		49.96	2 / 6			
reaction time	0.220	interval		3.85	3.86	3.98	4.00	4.18	4.40	4.48	4.67	4.90	5.71			11.69	12.58	14.05
		velocity	7.59	9.09	9.07	8.79	8.75	8.37	7.95	7.81	7.49	7.14	7.01	8.01		8.98	8.35	7.47
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	15	19	176				
Müller, Vít (CZE) (1996)		time	6.08	9.83	13.56	17.39	21.44	25.60	30.04	34.66	39.36	44.23		49.97	3 / 7			
reaction time	0.178	interval		3.75	3.73	3.83	4.05	4.16	4.44	4.62	4.70	4.87	5.74			11.31	12.65	14.19
		velocity	7.40	9.33	9.38	9.14	8.64	8.41	7.88	7.58	7.45	7.19	6.97	8.00		9.28	8.30	7.40
H1 lead leg	L	strides	21	13	13	13	13	13	14	14	15	15	18.5	162.5				

Semi-Final 2

date 28-Sep-19

Kakehata (2019) - race analysis of men's 400m hurdles 2019 World Championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.73	9.33	13.00	16.74	20.60		24.68	28.91	33.24	37.88	42.61		48.28	4 / 1			
reaction time	0.154	interval		3.60	3.67	3.74	3.86		4.08	4.23	4.33	4.64	4.73	5.67			11.01	12.17	13.70
		velocity	7.85	9.72	9.54	9.36	9.07		8.58	8.27	8.08	7.54	7.40	7.05	8.29		9.54	8.63	7.66
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.2	158.2				
Lahoulou, Abdelmalik (ALG)		time	6.05	9.67	13.30	17.03	20.93		25.05	29.38	33.90	38.48	43.11		48.39	6 / 2			
reaction time	0.159	interval		3.62	3.63	3.73	3.90		4.12	4.33	4.52	4.58	4.63	5.28	NR PB		10.98	12.35	13.73
		velocity	7.44	9.67	9.64	9.38	8.97		8.50	8.08	7.74	7.64	7.56	7.58	8.27		9.56	8.50	7.65
H1 lead leg	L	strides	22	13	13	13	13		13	13	14	14	14	18	160				
Holmes, TJ (USA) (1995)		time	5.90	9.49	13.18	16.95	20.97		25.16	29.45	34.05	38.59	43.38		48.67	7 / 3			
reaction time	0.258	interval		3.59	3.69	3.77	4.02		4.19	4.29	4.60	4.54	4.79	5.29			11.05	12.50	13.93
		velocity	7.63	9.75	9.49	9.28	8.71		8.35	8.16	7.61	7.71	7.31	7.56	8.22		9.50	8.40	7.54
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	14	17	157				
Vaillant, Ludvy (FRA) (1995)		time	6.00	9.59	13.30	17.08	21.03		25.17	29.52	33.98	38.66	43.45		49.10	5 / 4			
reaction time	0.209	interval		3.59	3.71	3.78	3.95		4.14	4.35	4.46	4.68	4.79	5.65			11.08	12.44	13.93
		velocity	7.50	9.75	9.43	9.26	8.86		8.45	8.05	7.85	7.48	7.31	7.08	8.15		9.48	8.44	7.54
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	14	17.7	159.7				
McAlister, Chris (GBR) (1995		time	6.13	9.96	13.84	17.76	21.82		26.01	30.33	34.80	39.32	43.94		49.18	9 / 5			
reaction time	0.165	interval		3.83	3.88	3.92	4.06		4.19	4.32	4.47	4.52	4.62	5.24	PB		11.63	12.57	13.61
		velocity	7.34	9.14	9.02	8.93	8.62		8.35	8.10	7.83	7.74	7.58	7.63	8.13		9.03	8.35	7.71
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15	19	171				
Campbell, Luke (GER) (1994)		time	5.82	9.47	13.17	17.00	21.02		25.25	29.66	34.27	39.00	44.01		50.00	3 / 6			
reaction time	0.146	interval		3.65	3.70	3.83	4.02		4.23	4.41	4.61	4.73	5.01	5.99			11.18	12.66	14.35
		velocity	7.73	9.59	9.46	9.14	8.71		8.27	7.94	7.59	7.40	6.99	6.68	8.00		9.39	8.29	7.32
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Dobek, Patryk (POL) (1994)		time	6.08	9.84	13.67	17.59	21.74		26.00	30.33	34.81	39.44	44.39		50.18	8 / 7			
reaction time	0.174	interval		3.76	3.83	3.92	4.15		4.26	4.33	4.48	4.63	4.95	5.79			11.51	12.74	14.06
		velocity	7.40	9.31	9.14	8.93	8.43		8.22	8.08	7.81	7.56	7.07	6.91	7.97		9.12	8.24	7.47
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	17	17.7	160.7				
Toyoda, Masaki (JPN) (1998)		time	6.00	9.80	13.60	17.57	21.70		26.03	30.44	35.05	39.84	44.69		50.30	2 / 8			
reaction time	0.207	interval		3.80	3.80	3.97	4.13		4.33	4.41	4.61	4.79	4.85	5.61			11.57	12.87	14.25
		velocity	7.50	9.21	9.21	8.82	8.47		8.08	7.94	7.59	7.31	7.22	7.13	7.95		9.08	8.16	7.37
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18	168				

Semi-Final 1

date 28-Sep-19

Kakehata (2019) - race analysis of men's 400m hurdles 2019 World Championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison Brendon		time	6.12	9.84	13.68	17.51	21.49		25.56	29.76	34.13	38.65	43.25		48.35	6 / 1			
reaction time	0.211	interval		3.72	3.84	3.83	3.98		4.07	4.20	4.37	4.52	4.60	5.10	AJR PB		11.39	12.25	13.49
		velocity	7.35	9.41	9.11	9.14	8.79		8.60	8.33	8.01	7.74	7.61	7.84	8.27		9.22	8.57	7.78

H1 lead leg	L	strides	20	13	13	13	12	12	13	13	14	14	16.5	153.5				
Copello, Yasmani (TUR) (19		time	5.97	9.66	13.46	17.32	21.29	25.41	29.61	34.03	38.41	43.08		48.39	3 / 2			
reaction time	0.232	interval		3.69	3.80	3.86	3.97	4.12	4.20	4.42	4.38	4.67	5.31			11.35	12.29	13.47
		velocity	7.54	9.49	9.21	9.07	8.82	8.50	8.33	7.92	7.99	7.49	7.53	8.27		9.25	8.54	7.80
H1 lead leg	R	strides	20	13	13	13	13	13	14	14	15	15	18	161				
McMaster, Kyron (IVB) (1997		time	5.88	9.76	13.51	17.29	21.19	25.24	29.42	33.85	38.35	42.97		48.40	5 / 3			
reaction time	0.229	interval		3.88	3.75	3.78	3.90	4.05	4.18	4.43	4.50	4.62	5.43			11.41	12.13	13.55
		velocity	7.65	9.02	9.33	9.26	8.97	8.64	8.37	7.90	7.78	7.58	7.37	8.26		9.20	8.66	7.75
H1 lead leg	L	strides	21	13	13	13	13	13	13	14	14	14	18	159				
Mägi, Rasmus (EST) (1992)		time	6.15	9.94	13.77	17.70	21.77	25.97	30.34	34.72	39.19	43.72		48.93	7 / 4			
reaction time	0.140	interval		3.79	3.83	3.93	4.07	4.20	4.37	4.38	4.47	4.53	5.21			11.55	12.64	13.38
		velocity	7.32	9.23	9.14	8.91	8.60	8.33	8.01	7.99	7.83	7.73	7.68	8.17		9.09	8.31	7.85
H1 lead leg	L	strides	21	13	13	13	13	13	14	14	14	14	17.2	159.2				
Touati, Mohamed Amin (TUI		time	6.20	10.04	13.92	17.80	21.88	26.06	30.28	34.63	39.11	43.76		49.14	4 / 5			
reaction time	0.179	interval		3.84	3.88	3.88	4.08	4.18	4.22	4.35	4.48	4.65	5.38	PB		11.60	12.48	13.48
		velocity	7.26	9.11	9.02	9.02	8.58	8.37	8.29	8.05	7.81	7.53	7.43	8.14		9.05	8.41	7.79
H1 lead leg	R	strides	22	14	14	13	14	14	14	14	15	15	17.7	166.7				
Lattin, Amere (USA) (1997)		time	5.93	9.71	13.64	17.66	21.74	25.91	30.29	34.66	39.27	43.85		49.20	2 / 6			
reaction time	0.152	interval		3.78	3.93	4.02	4.08	4.17	4.38	4.37	4.61	4.58	5.35			11.73	12.63	13.56
		velocity	7.59	9.26	8.91	8.71	8.58	8.39	7.99	8.01	7.59	7.64	7.48	8.13		8.95	8.31	7.74
H1 lead leg	L	strides	20	13	13	13	13	13	14	14	14	14	17	158				
Mowatt, Kemar (JAM) (1995)		time	5.93	9.57	13.25	17.05	20.97	25.15	29.43	33.92	38.54	43.42		49.32	8 / 7			
reaction time	0.163	interval		3.64	3.68	3.80	3.92	4.18	4.28	4.49	4.62	4.88	5.90			11.12	12.38	13.99
		velocity	7.59	9.62	9.51	9.21	8.93	8.37	8.18	7.80	7.58	7.17	6.78	8.11		9.44	8.48	7.51
H1 lead leg	L	strides	21	13	13	13	13	14	14	15	15	15	18	164				

Heat 4 (TV Analysis) date 27-Sep-19 *Henson (2021) - Athlete First: 2019 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.92	9.64	13.40	17.40	21.40		25.56	29.92	34.48	39.32	44.28		49.62	4 / 1			
reaction time	0.217	interval		3.72	3.76	4.00	4.00		4.16	4.36	4.56	4.84	4.96	5.34			11.48	12.52	14.36
		velocity	7.60	9.41	9.31	8.75	8.75		8.41	8.03	7.68	7.23	7.06	7.49	8.06		9.15	8.39	7.31
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	15	14	16.5	157				

Heat 3 (TV Analysis) date 27-Sep-19 *Henson (2021) - Athlete First: 2019 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	6.04	9.92	13.84	17.84	21.96		26.16	30.36	34.76	39.20	43.76		49.08	8 / 1			
reaction time	0.183	interval		3.88	3.92	4.00	4.12		4.20	4.20	4.40	4.44	4.56	5.32			11.80	12.52	13.40
		velocity	7.45	9.02	8.93	8.75	8.50		8.33	8.33	7.95	7.88	7.68	7.52	8.15		8.90	8.39	7.84
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	13	14	17	156				

Heat 1 (TV Analysis) date 27-Sep-19 *Henson (2021) - Athlete First: 2019 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.72	9.48	13.28	17.16	21.24			29.68	34.04	38.76	43.64		49.27	4 / 1			
reaction time	0.161	interval		3.76	3.80	3.88	4.08			8.44	4.36	4.72	4.88	5.63			11.44	12.52	13.96
		velocity	7.87	9.31	9.21	9.02	8.58			8.29	8.03	7.42	7.17	7.10	8.12		9.18	8.39	7.52
H1 lead leg	L	strides	20	13	13	13	13				13	15	15	17	132				

2019 The Match - Europe v USA (Minsk, BLR) (TV Analysis)

FINAL date 10-Sep-19 *Henson (2020) - Athlete First: 2019 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kendziera, Dave (USA) (1994		time	5.80	9.56	13.40	17.23	21.20		25.33	29.73	34.16	38.76	43.46		48.99	6 / 1			
reaction time	0.157	interval		3.76	3.84	3.83	3.97		4.13	4.40	4.43	4.60	4.70	5.53			11.43	12.50	13.73
		velocity	7.76	9.31	9.11	9.14	8.82		8.47	7.95	7.90	7.61	7.45	7.23	8.16		9.19	8.40	7.65
H1 lead leg	R	strides		13	13	13	13		13	13	14	14	14	18.2	138.2				
Lattin, Amere (USA) (1997)		time	5.90	9.63	13.53	17.46	21.60		25.90	30.26	34.76	39.20	43.93		49.12	4 / 2			
reaction time	0.171	interval		3.73	3.90	3.93	4.14		4.30	4.36	4.50	4.44	4.73	5.19			11.56	12.80	13.67
		velocity	7.63	9.38	8.97	8.91	8.45		8.14	8.03	7.78	7.88	7.40	7.71	8.14		9.08	8.20	7.68
H1 lead leg	L	strides		13	13	13			14	14	14	14	15	17.2	127.2				
Vaillant, Ludvy (FRA) (1995)		time	6.06	9.80	13.63	17.50	21.56		25.70	30.03	34.53	39.13	43.73		49.20	5 / 3			
reaction time	0.199	interval		3.74	3.83	3.87	4.06		4.14	4.33	4.50	4.60	4.60	5.47			11.44	12.53	13.70
		velocity	7.43	9.36	9.14	9.04	8.62		8.45	8.08	7.78	7.61	7.61	7.31	8.13		9.18	8.38	7.66
H1 lead leg	R	strides		13	13	13	13		13	14	14	14	14	17.5	138.5				

2019 Weltklasse (Zürich, SUI) (TV Analysis)

FINAL date 29-Aug-19 *Henson (2020) - Athlete First: 2019 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.66	9.16	12.76	16.40	20.22	21.9	24.18	28.32	32.56	37.08	41.62		46.92	7 / 1			
reaction time	0.140	interval		3.50	3.60	3.64	3.82		3.96	4.14	4.24	4.52	4.54	5.30	AR PB		10.74	11.92	13.30
		velocity	7.95	10.00	9.72	9.62	9.16	9.13	8.84	8.45	8.25	7.74	7.71	7.55	8.53		9.78	8.81	7.89
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18.2	159.2				

Benjamin, Rai (USA) (1997)		time	5.74	9.34	12.98	16.74	20.62	22.2	24.54	28.61	32.80	37.18	41.84		46.98	5 / 2		
reaction time	0.173	interval		3.60	3.64	3.76	3.88		3.92	4.07	4.19	4.38	4.66	5.14	PB		11.00	11.87	13.23
		velocity	7.84	9.72	9.62	9.31	9.02	9.01	8.93	8.60	8.35	7.99	7.51	7.78	8.51		9.55	8.85	7.94
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	14	17	155				
McMaster, Kyron (IVB) (1997		time	5.72	9.36	13.06	16.76	20.62	22.3	24.64	28.88	33.30	37.98	42.80		48.58	6 / 3		
reaction time	0.177	interval		3.64	3.70	3.70	3.86		4.02	4.24	4.42	4.68	4.82	5.78			11.04	12.12	13.92
		velocity	7.87	9.62	9.46	9.46	9.07	8.97	8.71	8.25	7.92	7.48	7.26	6.92	8.23		9.51	8.66	7.54
H1 lead leg	L	strides	21	13	13	13	13		13	14	14		15		129				
Copello, Yasmani (TUR) (198		time	5.80	9.46		17.10	21.08	22.7	25.16	29.38		38.42	43.20		48.58	4 / 4		
reaction time	0.167	interval		3.66		7.64	3.98		4.08	4.22		9.04	4.78	5.38			11.30	12.28	13.82
		velocity	7.76	9.56		9.16	8.79	8.81	8.58	8.29		7.74	7.32	7.43	8.23		9.29	8.55	7.60
H1 lead leg	R	strides	20	13			13		13	13			14		86				
Kendziera, Dave (USA) (1994		time	5.80	9.52		17.30	21.28	22.9	25.40	29.68		38.80	43.56		48.98	3 / 5		
reaction time	0.156	interval		3.72		7.78	3.98		4.12	4.28		9.12	4.76	5.42			11.50	12.38	13.88
		velocity	7.76	9.41		9.00	8.79	8.73	8.50	8.18		7.68	7.35	7.38	8.17		9.13	8.48	7.56
H1 lead leg	R	strides	20	13			13		13	13			14		86				
Barr, Thomas (IRL) (1992)		time	5.98	9.76		17.60	21.62	23.3	25.72	30.06		39.16	43.84		49.17	1 / 6		
reaction time	0.127	interval		3.78		7.84	4.02		4.10	4.34		9.10	4.68	5.33			11.62	12.46	13.78
		velocity	7.53	9.26		8.93	8.71	8.58	8.54	8.06		7.69	7.48	7.50	8.14		9.04	8.43	7.62
H1 lead leg	L	strides	21	13			13		13	14			14		88				

2019 Meeting de Paris (Paris, FRA) (TV Analysis)

FINAL date 24-Aug-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.64	9.24	12.86	16.59	20.42	22.1	24.48	28.66	32.92	37.35	41.96		47.26	7 / 1			
reaction time	0.157	interval		3.60	3.62	3.73	3.83		4.06	4.18	4.26	4.43	4.61	5.30			10.95	12.07	13.30
		velocity	7.98	9.72	9.67	9.38	9.14	9.05	8.62	8.37	8.22	7.90	7.59	7.55	8.46		9.59	8.70	7.89
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	13	18	155				
Valliant, Ludvy (FRA) (1995)		time	5.86	9.48	13.18	16.94	20.80	22.5	24.88	29.12	33.52	38.14	42.86		48.30	2 / 2		
reaction time	0.155	interval		3.62	3.70	3.76	3.86		4.08	4.24	4.40	4.62	4.72	5.44	PB		11.08	12.18	13.74
		velocity	7.68	9.67	9.46	9.31	9.07	8.89	8.58	8.25	7.95	7.58	7.42	7.35	8.28		9.48	8.62	7.64
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	14	18	160				
McMaster, Kyron (IVB) (1997		time	5.78	9.48	13.24	17.02	20.92	22.6	24.92	29.12	33.44	38.00	42.72		48.33	8 / 3		
reaction time	0.172	interval		3.70	3.76	3.78	3.90		4.00	4.20	4.32	4.56	4.72	5.61			11.24	12.10	13.60
		velocity	7.79	9.46	9.31	9.26	8.97	8.85	8.75	8.33	8.10	7.68	7.42	7.13	8.28		9.34	8.68	7.72
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	18	160				
Copello, Yasmani (TUR) (198		time	5.78	9.42	13.18	17.04	21.00	22.7	25.08	29.32	33.74	38.28	43.00		48.47	4 / 4		
reaction time	0.192	interval		3.64	3.76	3.86	3.96		4.08	4.24	4.42	4.54	4.72	5.47			11.26	12.28	13.68
		velocity	7.79	9.62	9.31	9.07	8.84	8.81	8.58	8.25	7.92	7.71	7.42	7.31	8.25		9.33	8.55	7.68
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	14	17.7	157.7				
Holmes, TJ (USA) (1995)		time	5.86	9.56	13.30	17.32	21.46	23.2	25.62	29.94	34.40	39.12	43.80		49.04	6 / 5		
reaction time	0.197	interval		3.70	3.74	4.02	4.14		4.16	4.32	4.46	4.72	4.68	5.24			11.46	12.62	13.86
		velocity	7.68	9.46	9.36	8.71	8.45	8.62	8.41	8.10	7.85	7.42	7.48	7.63	8.16		9.16	8.32	7.58
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17	156				
Kendziera, Dave (USA) (1994		time	5.80	9.60	13.52	17.42	21.50	23.2	25.66	30.00	34.44	39.08	43.78		49.16	5 / 6		
reaction time	0.152	interval		3.80	3.92	3.90	4.08		4.16	4.34	4.44	4.64	4.70	5.38			11.62	12.58	13.78
		velocity	7.76	9.21	8.93	8.97	8.58	8.62	8.41	8.06	7.88	7.54	7.45	7.43	8.14		9.04	8.35	7.62
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	14	14	17.5	156.5				
Barr, Thomas (IRL) (1992)		time	5.92	9.68	13.52	17.42	21.40	23.1	25.58	30.04	34.58	39.34	44.04		49.32	1 / 7		
reaction time	0.148	interval		3.76	3.84	3.90	3.98		4.18	4.46	4.54	4.76	4.70	5.28			11.50	12.62	14.00
		velocity	7.60	9.31	9.11	8.97	8.79	8.66	8.37	7.85	7.71	7.35	7.45	7.58	8.11		9.13	8.32	7.50
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	18	162				

2019 Chinese National Grand Prix Final (Daqing, CHN)

FINAL date 23-Aug-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Wang Yijie (CHN) (1997)		time	6.12	10.05	13.95	18.03	22.27		26.64	31.16	35.70	40.35	45.11		50.70	4 / 1			
reaction time	0.218	interval		3.93	3.90	4.08	4.24		4.37	4.52	4.54	4.65	4.76	5.59			11.91	13.13	13.95
		velocity	7.35	8.91	8.97	8.58	8.25		8.01	7.74	7.71	7.53	7.35	7.16	7.89		8.82	8.00	7.53
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	18.3	171.3				
Li Guangzhen (CHN) (1995)		time	6.74	10.51	14.48	18.67	22.89		27.21	31.70	36.37	41.02	45.75		51.02	6 / 2		
reaction time	0.213	interval		3.77	3.97	4.19	4.22		4.32	4.49	4.67	4.65	4.73	5.27			11.93	13.03	14.05
		velocity	6.68	9.28	8.82	8.35	8.29		8.10	7.80	7.49	7.53	7.40	7.59	7.84		8.80	8.06	7.47
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Shang Shou (CHN) (1995)		time	6.55	10.56	14.78	19.05	23.41		27.89	32.33	36.88	41.44	46.01		51.02	5 / 3		
reaction time	0.320	interval		4.01	4.22	4.27	4.36		4.48	4.44	4.55	4.56	4.57	5.01			12.50	13.28	13.68
		velocity	6.87	8.73	8.29	8.20	8.03		7.81	7.88	7.69	7.68	7.66	7.98	7.84		8.40	7.91	7.68

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	L	strides	22	14	14	14	14	14	14	15	15	15	18	169				
Wang Hongwen (CHN) (200		time	6.34	10.33	14.27	18.40	22.69	27.07	31.58	36.27	41.01	45.80		51.18	2 / 4			
reaction time	0.270	interval		3.99	3.94	4.13	4.29	4.38	4.51	4.69	4.74	4.79	5.38			12.06	13.18	14.22
		velocity	7.10	8.77	8.88	8.47	8.16	7.99	7.76	7.46	7.38	7.31	7.43	7.82		8.71	7.97	7.38
H1 lead leg	R	strides	21	14	14	14	14	14	15	15	15	15	18	169				
Zhuang Linfei (CHN) (1996)		time	6.20	10.04	14.03	18.18	22.48	27.00	31.60	36.24	41.11	46.02		51.67	7 / 5			
reaction time	0.220	interval		3.84	3.99	4.15	4.30	4.52	4.60	4.64	4.87	4.91	5.65			11.98	13.42	14.42
		velocity	7.26	9.11	8.77	8.43	8.14	7.74	7.61	7.54	7.19	7.13	7.08	7.74		8.76	7.82	7.28
H1 lead leg	L	strides	13	13	14	14	14	14	15	15	15	15	18.5	160.5				
Cai Jungi (CHN) (1996)		time	6.34	10.31	14.30	18.40	22.66	26.98	31.42	36.02	40.76	45.70		51.69	3 / 6			
reaction time	0.201	interval		3.97	3.99	4.10	4.26	4.32	4.44	4.60	4.74	4.94	5.99			12.06	13.02	14.28
		velocity	7.10	8.82	8.77	8.54	8.22	8.10	7.88	7.61	7.38	7.09	6.68	7.74		8.71	8.06	7.35
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	15	19.5	176.5				
Cui Caizhuang (CHN) (1995)		time	6.22	10.22	14.31	18.55	22.90	27.39	32.02	36.81	41.66	46.59		52.25	9 / 7			
reaction time	0.216	interval		4.00	4.09	4.24	4.35	4.49	4.63	4.79	4.85	4.93	5.66			12.33	13.47	14.57
		velocity	7.23	8.75	8.56	8.25	8.05	7.80	7.56	7.31	7.22	7.10	7.07	7.66		8.52	7.80	7.21
H1 lead leg	R	strides	22	14	14	14	14	15	15	15	15	15	18.5	171.5				
Wang Daojun (CHN) (2000)		time	6.08	10.12	14.18	18.40	22.76	27.40	32.18	37.04	41.98	46.98		52.58	8 / 8			
reaction time	0.178	interval		4.04	4.06	4.22	4.36	4.64	4.78	4.86	4.94	5.00	5.60			12.32	13.78	14.80
		velocity	7.40	8.66	8.62	8.29	8.03	7.54	7.32	7.20	7.09	7.00	7.14	7.61		8.52	7.62	7.09
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	18.5	170.5				

Heat 2

date 22-Aug-19 *CAA Hurdle Development (2019)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shang Shou (CHN) (1995)		time	6.49	10.63	14.80	19.05	23.36		27.83	32.30	36.84	41.42	46.16		51.62	6 / 1			
reaction time	0.275	interval		4.14	4.17	4.25	4.31		4.47	4.47	4.54	4.58	4.74	5.46			12.56	13.25	13.86
		velocity	6.93	8.45	8.39	8.24	8.12		7.83	7.83	7.71	7.64	7.38	7.33	7.75		8.36	7.92	7.58
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Zhuang Linfei (CHN) (1996)		time	6.33	10.28	14.34	18.55	22.94		27.51	32.08	36.85	41.69	46.55		52.04	8 / 2			
reaction time	0.233	interval		3.95	4.06	4.21	4.39		4.57	4.57	4.77	4.84	4.86	5.49			12.22	13.53	14.47
		velocity	7.11	8.86	8.62	8.31	7.97		7.66	7.66	7.34	7.23	7.20	7.29	7.69		8.59	7.76	7.26
H1 lead leg	L	strides	21	13	13	14	14		14	14	15	15	15	18	166				
Wang Yijie (CHN) (1997)		time	6.24	10.28	14.41	18.64	23.07		27.61	32.18	36.82	41.64	46.59		52.26	4 / 3			
reaction time	0.222	interval		4.04	4.13	4.23	4.43		4.54	4.57	4.64	4.82	4.95	5.67			12.40	13.54	14.41
		velocity	7.21	8.66	8.47	8.27	7.90		7.71	7.66	7.54	7.26	7.07	7.05	7.65		8.47	7.75	7.29
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	18.5	171.5				
Wang Daojun (CHN) 2000)		time	6.24	10.38	14.52	18.71	23.08		27.52	32.07	36.69	41.54	46.66		52.31	9 / 4			
reaction time	0.219	interval		4.14	4.14	4.19	4.37		4.44	4.55	4.62	4.85	5.12	5.66			12.47	13.36	14.59
		velocity	7.21	8.45	8.45	8.35	8.01		7.88	7.69	7.58	7.22	6.84	7.07	7.65		8.42	7.86	7.20
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.5	170.5				
Wang Hongwen (CHN) (200		time	6.39	10.44	14.58	18.85	23.27		27.79	32.40	37.12	41.96	46.90		52.37	5 / 5			
reaction time	0.246	interval		4.05	4.14	4.27	4.42		4.52	4.61	4.72	4.84	4.94	5.47			12.46	13.55	14.50
		velocity	7.04	8.64	8.45	8.20	7.92		7.74	7.59	7.42	7.23	7.09	7.31	7.64		8.43	7.75	7.24
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	17.5	168.5				
Gong Debin (CHN) (1997)		time	6.36	10.53	14.71	19.07	23.62		28.24	33.12	38.15	43.18	48.20		54.11	7 / 6			
reaction time	0.325	interval		4.17	4.18	4.36	4.55		4.62	4.88	5.03	5.03	5.02	5.91			12.71	14.05	15.08
		velocity	7.08	8.39	8.37	8.03	7.69		7.58	7.17	6.96	6.96	6.97	6.77	7.39		8.26	7.47	6.96
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	16	19	172				

Heat 1

date 22-Aug-19 *CAA Hurdle Development (2019)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Guangzhen (CHN) (1995)		time	6.66	10.90	15.12	19.50	23.95		28.45	32.96	37.67	42.36	47.05		52.20	9 / 1			
reaction time	0.258	interval		4.24	4.22	4.38	4.45		4.50	4.51	4.71	4.69	4.69	5.15			12.84	13.46	14.09
		velocity	6.76	8.25	8.29	7.99	7.87		7.78	7.76	7.43	7.46	7.46	7.77	7.66		8.18	7.80	7.45
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Cui Caizhuang (CHN) (1995)		time	6.38	10.48	14.64	18.93	23.25		27.82	32.47	37.24	42.08	46.91		52.30	8 / 2			
reaction time	0.223	interval		4.10	4.16	4.29	4.32		4.57	4.65	4.77	4.84	4.83	5.39			12.55	13.54	14.44
		velocity	7.05	8.54	8.41	8.16	8.10		7.66	7.53	7.34	7.23	7.25	7.42	7.65		8.37	7.75	7.27
H1 lead leg	R	strides	24	14	14	14	14		15	15	15	15	15	18.3	173.3				
Cai Jungi (CHN) (1996)		time	6.39	10.53	14.80	19.17	23.54		27.99	32.57	37.17	41.91	46.76		52.42	6 / 3			
reaction time	0.199	interval		4.14	4.27	4.37	4.37		4.45	4.58	4.60	4.74	4.85	5.66			12.78	13.40	14.19
		velocity	7.04	8.45	8.20	8.01	8.01		7.87	7.64	7.61	7.38	7.22	7.07	7.63		8.22	7.84	7.40
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Liu Yangyang (CHN) (1995)		time	6.45	10.59	14.85	19.24	23.67		28.22	32.87	37.64	42.44	47.25		52.44	5 / 4			
reaction time	0.200	interval		4.14	4.26	4.39	4.43		4.55	4.65	4.77	4.80	4.81	5.19			12.79	13.63	14.38
		velocity	6.98	8.45	8.22	7.97	7.90		7.69	7.53	7.34	7.29	7.28	7.71	7.63		8.21	7.70	7.30

H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	15	18.5	175.5				
Yang Baichuan (CHN) (1995)		time	6.37	10.48	14.75	19.15	23.59	28.09	32.67	37.32	42.13	46.98		52.44	7 / 5			
reaction time	0.166	interval		4.11	4.27	4.40	4.44	4.50	4.58	4.65	4.81	4.85	5.46			12.78	13.52	14.31
		velocity	7.06	8.52	8.20	7.95	7.88	7.78	7.64	7.53	7.28	7.22	7.33	7.63		8.22	7.77	7.34
H1 lead leg	L	strides	23	15	15	15	15	15	15	15	15	15	20	178				
Long Wei (CHN) (1997)		time	6.36	10.58	14.81	19.12	23.59	28.19	32.88	37.65	42.61	47.68		53.57	3 / 6			
reaction time	0.219	interval		4.22	4.23	4.31	4.47	4.60	4.69	4.77	4.96	5.07	5.89			12.76	13.76	14.80
		velocity	7.08	8.29	8.27	8.12	7.83	7.61	7.46	7.34	7.06	6.90	6.79	7.47		8.23	7.63	7.09
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	15	19	176				

2019 Müller Grand Prix (Birmingham, GBR) (TV Analysis)

FINAL date 18-Aug-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Copello, Yasmani (TUR) (198		time	5.88	9.68	13.52	17.40	21.40	23.2	25.60	30.08	34.56	39.12	43.68		49.08	6 / 1			
reaction time	0.173	interval		3.80	3.84	3.88	4.00		4.20	4.48	4.48	4.56	4.56	5.40			11.52	12.68	13.60
		velocity	7.65	9.21	9.11	9.02	8.75	8.6207	8.33	7.81	7.81	7.68	7.68	7.41	8.15		9.11	8.28	7.72
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	18	159				
dos Santos, Alison Brendon		time	5.96	9.92	13.80	17.80	21.80	23.6	25.92	30.24	34.72	39.36	43.88		49.20	4 / 2			
reaction time	0.152	interval		3.96	3.88	4.00	4.00		4.12	4.32	4.48	4.64	4.52	5.32			11.84	12.44	13.64
		velocity	7.55	8.84	9.02	8.75	8.75	8.47	8.50	8.10	7.81	7.54	7.74	7.52	8.13		8.87	8.44	7.70
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	14	17	157				
Kendziera, Dave (USA) (1994		time	5.84	9.68	13.52	17.36	21.28	23.1	25.40	29.76	34.32	38.92	43.68		49.29	7 / 3			
reaction time	0.130	interval		3.84	3.84	3.84	3.92		4.12	4.36	4.56	4.60	4.76	5.61			11.52	12.40	13.92
		velocity	7.71	9.11	9.11	9.11	8.93	8.66	8.50	8.03	7.68	7.61	7.35	7.13	8.12		9.11	8.47	7.54
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	15	18.5	159.5				
Mowatt, Kemar (JAM) (1995)		time	5.80	9.48	13.32	17.20	21.16	22.9	25.20	29.64	34.12	38.84	43.64		49.56	3 / 4			
reaction time	0.162	interval		3.68	3.84	3.88	3.96		4.04	4.44	4.48	4.72	4.80	5.92			11.40	12.44	14.00
		velocity	7.76	9.51	9.11	9.02	8.84	8.73	8.66	7.88	7.81	7.42	7.29	6.76	8.07		9.21	8.44	7.50
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	18.5	162.5				
Barr, Thomas (IRL) (1992)		time	6.08	9.96	13.84	17.80	21.88	23.7	26.12	30.68	35.28	39.92			50.16	8 / 5			
reaction time	0.171	interval		3.88	3.88	3.96	4.08		4.24	4.56	4.60	4.64					11.72	12.88	
		velocity	7.40	9.02	9.02	8.84	8.58	8.44	8.25	7.68	7.61	7.54			7.97		8.96	8.15	
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15			129				
Abe, Takatoshi (JPN) (1991)		time	5.96	9.72	13.56	17.44	21.44	23.2	25.52	29.96	34.68	39.48	44.48		50.36	2 / 6			
reaction time	0.148	interval		3.76	3.84	3.88	4.00		4.08	4.44	4.72	4.80	5.00	5.88			11.48	12.52	14.52
		velocity	7.55	9.31	9.11	9.02	8.75	8.62	8.58	7.88	7.42	7.29	7.00	6.80	7.94		9.15	8.39	7.23
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Paul, Jacob (GBR) (1995)		time	6.04	9.92	13.88	17.88	22.04	23.9	26.20		35.20	40.00	44.92		50.71	1 / 7			
reaction time	0.156	interval		3.88	3.96	4.00	4.16		4.16		9.00	4.80	4.92	5.79			11.84		
		velocity	7.45	9.02	8.84	8.75	8.41	8.37	8.41		7.78	7.29	7.11	6.91	7.89		8.87		
H1 lead leg	L	strides	21	14	14	14	14		14	14		15	15		135				
Lattin, Amere (USA) (1997)		time	5.76	9.64	13.48	17.32	21.28	23.1	25.60	30.04	34.64	39.48	44.88		51.15	5 / 8			
reaction time	0.145	interval		3.88	3.84	3.84	3.96		4.32	4.44	4.60	4.84	5.40	6.27			11.56	12.72	14.84
		velocity	7.81	9.02	9.11	9.11	8.84	8.66	8.10	7.88	7.61	7.23	6.48	6.38	7.82		9.08	8.25	7.08
H1 lead leg	L	strides	20	13	13	13	13		14	14	14	15	16		145				

2019 Chinese National Youth Games (Taiyuan, CHN)

U18 FINAL (84cm) date 17-Aug-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Sun Yao (CHN) (2002)		time	6.40	10.47	14.64	18.86	23.28		27.82	32.50	37.26	42.16	47.12		52.86	4 / 1			
reaction time	0.223	interval		4.07	4.17	4.22	4.42		4.54	4.68	4.76	4.90	4.96	5.74			12.46	13.64	14.62
		velocity	7.03	8.60	8.39	8.29	7.92		7.71	7.48	7.35	7.14	7.06	6.97	7.57		8.43	7.70	7.18
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	16	16	20	180				
Pan Feng (CHN) (2002)		time	6.52	10.74	15.02	19.38	23.82		28.38	32.98	37.68	42.48	47.48		53.17	6 / 2			
reaction time	0.183	interval		4.22	4.28	4.36	4.44		4.56	4.60	4.70	4.80	5.00	5.69			12.86	13.60	14.50
		velocity	6.90	8.29	8.18	8.03	7.88		7.68	7.61	7.45	7.29	7.00	7.03	7.52		8.16	7.72	7.24
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	16	19.5	176.5				
Lin Yingxian (CHN) (2002)		time	6.50	10.65	14.90	19.16	23.62		28.26	33.02	37.68	42.68	47.62		53.18	5 / 3			
reaction time	0.211	interval		4.15	4.25	4.26	4.46		4.64	4.76	4.66	5.00	4.94	5.56			12.66	13.86	14.60
		velocity	6.92	8.43	8.24	8.22	7.85		7.54	7.35	7.51	7.00	7.09	7.19	7.52		8.29	7.58	7.19
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	19.5	177.5				
Liu Yunlang (CHN) (2002)		time	6.34	10.48	14.72	19.06	23.56		28.24	32.96	37.66	42.60	47.90		53.96	7 / 4			
reaction time	0.190	interval		4.14	4.24	4.34	4.50		4.68	4.72	4.70	4.94	5.30	6.06			12.72	13.90	14.94
		velocity	7.10	8.45	8.25	8.06	7.78		7.48	7.42	7.45	7.09	6.60	6.60	7.41		8.25	7.55	7.03
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	17	19.5	178.5				
Zeng Lingxian (CHN) (2002)		time	6.42	10.58	14.90	19.24	23.72		28.34	33.08	37.92	43.00	48.30		54.14	9 / 5			

reaction time	0.203	interval		4.16	4.32	4.34	4.48	4.62	4.74	4.84	5.08	5.30	5.84			12.82	13.84	15.22
		velocity	7.01	8.41	8.10	8.06	7.81	7.58	7.38	7.23	6.89	6.60	6.85	7.39		8.19	7.59	6.90
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	17	21	180				
Yu Zhiyou (CHN) (2003)		time	6.44	10.56	14.76	19.08	23.54	28.32	33.28	38.40	43.68	49.04		54.92	2 / 6			
reaction time	0.201	interval		4.12	4.20	4.32	4.46	4.78	4.96	5.12	5.28	5.36	5.88			12.64	14.20	15.76
		velocity	6.99	8.50	8.33	8.10	7.85	7.32	7.06	6.84	6.63	6.53	6.80	7.28		8.31	7.39	6.66
H1 lead leg	L	strides	23	15	15	15	15	16	16	17	17	17	21	187				
Wu Yuze (CHN) (2002)		time	6.46	10.58	14.74	19.02	23.50	28.12	32.82	37.74	43.02	48.82		54.99	8 / 7			
reaction time	0.206	interval		4.12	4.16	4.28	4.48	4.62	4.70	4.92	5.28	5.80	6.17			12.56	13.80	16.00
		velocity	6.97	8.50	8.41	8.18	7.81	7.58	7.45	7.11	6.63	6.03	6.48	7.27		8.36	7.61	6.56
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	16	18	20.5	181.5				
Song Weiwei (CHN) (2002)		time	6.63	10.82	15.18	19.54	24.20	29.28	34.48	39.80	45.12	50.68		56.87	3 / 8			
reaction time	0.186	interval		4.19	4.36	4.36	4.66	5.08	5.20	5.32	5.32	5.56	6.19			12.91	14.94	16.20
		velocity	6.79	8.35	8.03	8.03	7.51	6.89	6.73	6.58	6.58	6.29	6.46	7.03		8.13	7.03	6.48
H1 lead leg	L	strides	22	15	15	15	15	17	17	17	17	17	21	188				

U20 FINAL

date 17-Aug-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Xie Zhiyu (CHN) (2000)		time	6.42	10.36	14.34	18.39	22.60		26.86	31.20	35.64	40.34	44.92		49.96	6 / 1			
reaction time	0.284	interval		3.94	3.98	4.05	4.21		4.26	4.34	4.44	4.70	4.58	5.04	PB		11.97	12.81	13.72
		velocity	7.01	8.88	8.79	8.64	8.31		8.22	8.06	7.88	7.45	7.64	7.94	8.01		8.77	8.20	7.65
H1 lead leg	L	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Wang Hongwen (CHN) (200		time	6.30	10.22	14.20	18.28	22.46		26.76	31.20	35.76	40.44	45.28		50.80	7 / 2			
reaction time	0.252	interval		3.92	3.98	4.08	4.18		4.30	4.44	4.56	4.68	4.84	5.52	PB		11.98	12.92	14.08
		velocity	7.14	8.93	8.79	8.58	8.37		8.14	7.88	7.68	7.48	7.23	7.25	7.87		8.76	8.13	7.46
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	17.3	168.3				
Wang Daojun (CHN) (2000)		time	6.18	10.26	14.32	18.55	22.90		27.46	32.20	36.92	41.64	46.35		51.64	5 / 3			
reaction time	0.188	interval		4.08	4.06	4.23	4.35		4.56	4.74	4.72	4.72	4.71	5.29			12.37	13.65	14.15
		velocity	7.28	8.58	8.62	8.27	8.05		7.68	7.38	7.42	7.42	7.43	7.56	7.75		8.49	7.69	7.42
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18	170				
Liu Shuang (CHN) (2000)		time	6.20	10.08	14.02	18.10	22.32		26.66	31.16	35.88	40.76	46.04		51.84	9 / 4			
reaction time	0.173	interval		3.88	3.94	4.08	4.22		4.34	4.50	4.72	4.88	5.28	5.80	PB		11.90	13.06	14.88
		velocity	7.26	9.02	8.88	8.58	8.29		8.06	7.78	7.42	7.17	6.63	6.90	7.72		8.82	8.04	7.06
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	17	19.5	179.5				
Lin Zhikai (CHN) (2001)		time	6.44	10.58	14.79	19.02	23.38		27.90	32.50	37.22	41.96	46.74		51.95	2 / 5			
reaction time	0.203	interval		4.14	4.21	4.23	4.36		4.52	4.60	4.72	4.74	4.78	5.21	PB		12.58	13.48	14.24
		velocity	6.99	8.45	8.31	8.27	8.03		7.74	7.61	7.42	7.38	7.32	7.68	7.70		8.35	7.79	7.37
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18	175				
Cao Xiong (CHN) (2001)		time	6.28	10.46	14.54	18.68	22.96		27.52	32.14	36.87	41.79	46.88		52.31	8 / 6			
reaction time	0.203	interval		4.18	4.08	4.14	4.28		4.56	4.62	4.73	4.92	5.09	5.43	PB		12.40	13.46	14.74
		velocity	7.17	8.37	8.58	8.45	8.18		7.68	7.58	7.40	7.11	6.88	7.37	7.65		8.47	7.80	7.12
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	16	19	177				
Zhu Yizheng (CHN) (2000)		time	6.41	10.46	14.54	18.74	23.11		27.70	32.44	37.34	42.46	47.66		53.54	4 / 7			
reaction time	0.223	interval		4.05	4.08	4.20	4.37		4.59	4.74	4.90	5.12	5.20	5.88			12.33	13.70	15.22
		velocity	7.02	8.64	8.58	8.33	8.01		7.63	7.38	7.14	6.84	6.73	6.80	7.47		8.52	7.66	6.90
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	16	16	19	174				
Leng Ziheng (CHN) (2000)		time	6.40	10.64	15.01	19.34	23.80		28.48	33.28	38.18	43.58	49.16		55.34	3 / 8			
reaction time	0.195	interval		4.24	4.37	4.33	4.46		4.68	4.80	4.90	5.40	5.58	6.18			12.94	13.94	15.88
		velocity	7.03	8.25	8.01	8.08	7.85		7.48	7.29	7.14	6.48	6.27	6.47	7.23		8.11	7.53	6.61
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	17	17	19	179				

U20 Heat 3

date 17-Aug-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Wang Hongwen (CHN) (200		time	6.40	10.32	14.42	18.62	22.95		27.39	31.99	36.67	41.49	46.50		52.86	6 / 1			
reaction time		interval		3.92	4.10	4.20	4.33		4.44	4.60	4.68	4.82	5.01	6.36			12.22	13.37	14.51
		velocity	7.03	8.93	8.54	8.33	8.08		7.88	7.61	7.48	7.26	6.99	6.29	7.57		8.59	7.85	7.24
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	18.3	169.3				
Liu Shuang (CHN) (2000)		time	6.41	10.41	14.46	18.64	22.96		27.41	32.05	36.78	41.73	47.06		53.11	5 / 2			
reaction time	0.203	interval		4.00	4.05	4.18	4.32		4.45	4.64	4.73	4.95	5.33	6.05	PB		12.23	13.41	15.01
		velocity	7.02	8.75	8.64	8.37	8.10		7.87	7.54	7.40	7.07	6.57	6.61	7.53		8.59	7.83	7.00
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	17	19.5	179.5				
Leng Ziheng (CHN) (2000)		time	6.35	10.55	14.83	19.20	23.68		28.33	33.10	37.88	43.02	48.03		53.51	3 / 3			
reaction time	0.202	interval		4.20	4.28	4.37	4.48		4.65	4.77	4.78	5.14	5.01	5.48	PB		12.85	13.90	14.93
		velocity	7.09	8.33	8.18	8.01	7.81		7.53	7.34	7.32	6.81	6.99	7.30	7.48		8.17	7.55	7.03
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	16	16	19.5	177.5				
Lan Jie (CHN) (2000)		time	6.32	10.45	14.72	18.95	23.26		27.69	32.30	37.28	42.45	47.78		53.70	7 / 4			

reaction time	0.203	interval		4.13	4.27	4.23	4.31	4.43	4.61	4.98	5.17	5.33	5.92			12.63	13.35	15.48
		velocity	7.12	8.47	8.20	8.27	8.12	7.90	7.59	7.03	6.77	6.57	6.76	7.45		8.31	7.87	6.78
H1 lead leg	L	strides	22	15	15	15	15	15	15	16	16	17	20.5	181.5				
Lü Baoliang (CHN) (2000)		time	6.65	10.98	15.36	19.84	24.41	29.28	34.32	39.37	44.68	49.90		55.71	8 / 5			
reaction time	0.200	interval		4.33	4.38	4.48	4.57	4.87	5.04	5.05	5.31	5.22	5.81			13.19	14.48	15.58
		velocity	6.77	8.08	7.99	7.81	7.66	7.19	6.94	6.93	6.59	6.70	6.88	7.18		7.96	7.25	6.74
H1 lead leg	L	strides	22	15	15	15	15	16	16	16	17	17	19	183				
Zhang Hongxi (CHN) (2001)		time	6.64	10.82	15.17	19.70	24.35	29.10	34.27	39.64	45.23	50.86		57.30	4 / 6			
reaction time	0.239	interval		4.18	4.35	4.53	4.65	4.75	5.17	5.37	5.59	5.63	6.44			13.06	14.57	16.59
		velocity	6.78	8.37	8.05	7.73	7.53	7.37	6.77	6.52	6.26	6.22	6.21	6.98		8.04	7.21	6.33
H1 lead leg	R	strides	23	15	15	15	15	15	17	17	17	17		166				

U20 Heat 2

date 17-Aug-19 — *CAA Hurdle Development (2019)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Xie Zhiyu (CHN) (2000)		time	6.30	10.32	14.33	18.48	22.70		27.05	31.86	37.19	42.46	47.66		53.98	5 / 1			
reaction time	0.209	interval		4.02	4.01	4.15	4.22		4.35	4.81	5.33	5.27	5.20	6.32			12.18	13.38	15.80
		velocity	7.14	8.71	8.73	8.43	8.29		8.05	7.28	6.57	6.64	6.73	6.33	7.41		8.62	7.85	6.65
H1 lead leg	L	strides	21	13	13	13	13		13	14	15	15	15	17.8	162.8				
Cao Xiong (CHN) (2001)		time	6.46	10.73	15.00	19.32	23.70		28.37	33.07	37.84	42.86	48.06		54.20	7 / 2			
reaction time	0.197	interval		4.27	4.27	4.32	4.38		4.67	4.70	4.77	5.02	5.20	6.14			12.86	13.75	14.99
		velocity	6.97	8.20	8.20	8.10	7.99		7.49	7.45	7.34	6.97	6.73	6.51	7.38		8.16	7.64	7.00
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	16	19	177				
Zou Haichao (CHN) (2001)		time	6.28	10.42	14.73	19.13	23.62		28.23	32.89	37.72	42.91	48.34		54.46	6 / 3			
reaction time	0.181	interval		4.14	4.31	4.40	4.49		4.61	4.66	4.83	5.19	5.43	6.12			12.85	13.76	15.45
		velocity	7.17	8.45	8.12	7.95	7.80		7.59	7.51	7.25	6.74	6.45	6.54	7.34		8.17	7.63	6.80
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	17	17	19.3	180.3				
Zheng Hao (CHN) (2001)		time	6.40	10.61	14.95	19.36	23.89		28.56	33.51	38.76	44.17	49.76		55.58	3 / 4			
reaction time	0.208	interval		4.21	4.34	4.41	4.53		4.67	4.95	5.25	5.41	5.59	5.82	PB		12.96	14.15	16.25
		velocity	7.03	8.31	8.06	7.94	7.73		7.49	7.07	6.67	6.47	6.26	6.87	7.20		8.10	7.42	6.46
H1 lead leg	R	strides	23	15	15	15	15		15	15	16	16	17	19.5	181.5				
Xu Xin (MAC) (2000)		time	6.34	10.62	15.00	19.52	24.23		29.38	34.80	40.40	46.16	52.40		59.60	4 / 5			
reaction time	0.176	interval		4.28	4.38	4.52	4.71		5.15	5.42	5.60	5.76	6.24	7.20			13.18	15.28	17.60
		velocity	7.10	8.18	7.99	7.74	7.43		6.80	6.46	6.25	6.08	5.61	5.56	6.71		7.97	6.87	5.97
H1 lead leg	L	strides	23	15	15	15	15		15	15	17	17	19		166				

U20 Heat 1

date 17-Aug-19 — *CAA Hurdle Development (2019)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Wang Daojun (CHN) (2000)		time	6.20	10.34	14.40	18.58	22.98		27.50	32.14	36.96	41.85	46.80		52.72	6 / 1			
reaction time	0.181	interval		4.14	4.06	4.18	4.40		4.52	4.64	4.82	4.89	4.95	5.92			12.38	13.56	14.66
		velocity	7.26	8.45	8.62	8.37	7.95		7.74	7.54	7.26	7.16	7.07	6.76	7.59		8.48	7.74	7.16
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18	170				
Zhu Yizheng (CHN) (2000)		time	6.47	10.50	14.56	18.74	23.04		27.54	32.10	36.90	41.96	47.10		52.90	5 / 2			
reaction time	0.209	interval		4.03	4.06	4.18	4.30		4.50	4.56	4.80	5.06	5.14	5.80	PB		12.27	13.36	15.00
		velocity	6.96	8.68	8.62	8.37	8.14		7.78	7.68	7.29	6.92	6.81	6.90	7.56		8.56	7.86	7.00
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	16	16	19	174				
Lin Zhikai (CHN) (2001)		time	6.65	10.98	15.24	19.58	24.00		28.56	33.14	37.84	42.62	47.56		53.12	7 / 3			
reaction time	0.197	interval		4.33	4.26	4.34	4.42		4.56	4.58	4.70	4.78	4.94	5.56			12.93	13.56	14.42
		velocity	6.77	8.08	8.22	8.06	7.92		7.68	7.64	7.45	7.32	7.09	7.19	7.53		8.12	7.74	7.28
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	17.8	175.8				
Zhou Chao (CHN) (2000)		time	6.42	10.56	14.86	19.16	23.64		28.18	32.78	37.84	42.96	48.14		53.90	3 / 4			
reaction time	0.208	interval		4.14	4.30	4.30	4.48		4.54	4.60	5.06	5.12	5.18	5.76	PB		12.74	13.62	15.36
		velocity	7.01	8.45	8.14	8.14	7.81		7.71	7.61	6.92	6.84	6.76	6.94	7.42		8.24	7.71	6.84
H1 lead leg	L	strides	22	15	15	15	15		15	15	16	16	16	19	179				
Sun Ke (CHN) (2001)		time	6.14	10.18	14.28	18.44	22.80		27.26	31.90	36.82	42.16	47.68		54.20	4 / 5			
reaction time	0.176	interval		4.04	4.10	4.16	4.36		4.46	4.64	4.92	5.34	5.52	6.52			12.30	13.46	15.78
		velocity	7.33	8.66	8.54	8.41	8.03		7.85	7.54	7.11	6.55	6.34	6.13	7.38		8.54	7.80	6.65
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	20	177				
Sun Wanhao (CHN) (2001)		time	6.54	10.76	15.08	19.42	23.85		28.50	33.38	38.40	43.62	49.12		55.04	8 / 6			
reaction time	0.216	interval		4.22	4.32	4.34	4.43		4.65	4.88	5.02	5.22	5.50	5.92	PB		12.88	13.96	15.74
		velocity	6.88	8.29	8.10	8.06	7.90		7.53	7.17	6.97	6.70	6.36	6.76	7.27		8.15	7.52	6.67
H1 lead leg	L	strides	22	15	15	15	15		15	16	16	16	17	20	182				

2019 Pan American Games (Lima, PER) (TV Analysis)

FINAL

date 08-Aug-19 — *Henson (2020) - Athlete First: 2019 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
dos Santos, Alison Brendon		time	5.90	9.67	13.51	17.45			25.36	29.52	33.82	38.23	42.97		48.45	5 / 1			
reaction time	0.160	interval		3.77	3.84	3.94			7.91	4.16	4.30	4.41	4.74	5.48	AJR PB		11.55	12.07	13.45
		velocity	7.63	9.28	9.11	8.88			8.85	8.41	8.14	7.94	7.38	7.30	8.26		9.09	8.70	7.81

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	L	strides	20	13	13	13			13	13	13	14	17	129				
Lattin, Amere (USA) (1997)		time	5.80	9.57	13.38	17.25	21.15	25.36	29.69	34.06				48.98	7 / 2			
reaction time	0.175	interval		3.77	3.81	3.87	3.90	4.21	4.33	4.37						11.45	12.44	
		velocity	7.76	9.28	9.19	9.04	8.97	8.31	8.08	8.01				8.17		9.17	8.44	
H1 lead leg	L	strides	20	13	13	13		13	14	14				100				
Mowatt, Kemar (JAM) (1995)		time	5.77	9.47	13.21	17.08		25.09	29.46	33.93	38.64	43.50		49.09	4 / 3			
reaction time	0.177	interval		3.70	3.74	3.87		8.01	4.37	4.47	4.71	4.86	5.59			11.31	12.38	14.04
		velocity	7.80	9.46	9.36	9.04		8.74	8.01	7.83	7.43	7.20	7.16	8.15		9.28	8.48	7.48
H1 lead leg	L	strides	21	13	13	13			14	14	15	15	18	136				

2019 Japanese National High School Championships (Okinawa, JPN)

FINAL date 06-Aug-19

Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Deguchi, Haruto (JPN) (2001		time	6.25	10.21	14.25	18.39	22.76		27.24	31.65	36.05	40.62	45.28		50.57	4 / 1			
reaction time		interval		3.96	4.04	4.14	4.37		4.48	4.41	4.40	4.57	4.66	5.29	PB		12.14	13.26	13.63
		velocity	7.20	8.84	8.66	8.45	8.01		7.81	7.94	7.95	7.66	7.51	7.56	7.91		8.65	7.92	7.70
H1 lead leg		strides		13	13	13	14		14	15	15	15	15		127				
Iwasaka, Shuto (JPN) (2001)		time	6.26	10.46	14.73	19.13	23.52		28.08	32.48	36.97	41.64	46.55		51.99	6 / 2			
reaction time		interval		4.20	4.27	4.40	4.39		4.56	4.40	4.49	4.67	4.91	5.44			12.87	13.35	14.07
		velocity	7.19	8.33	8.20	7.95	7.97		7.68	7.95	7.80	7.49	7.13	7.35	7.69		8.16	7.87	7.46
H1 lead leg		strides		15	15	15	15		15	15	15	15	15		135				
Kurokawa, Kazuki (JPN) (20(		time	6.18	10.23	14.33	18.78	23.43		28.29	32.97	37.69	42.43	47.17		52.27	5 / 3			
reaction time		interval		4.05	4.10	4.45	4.65		4.86	4.68	4.72	4.74	4.74	5.10			12.60	14.19	14.20
		velocity	7.28	8.64	8.54	7.87	7.53		7.20	7.48	7.42	7.38	7.38	7.84	7.65		8.33	7.40	7.39
H1 lead leg		strides		13	13	14	14		14	14	14	14	15		125				
Hamada, Hiroshi (JPN) (2001		time	6.26	10.28	14.41	18.69	23.02		27.46	31.92	36.53	41.54	46.85		52.71	3 / 4			
reaction time		interval		4.02	4.13	4.28	4.33		4.44	4.46	4.61	5.01	5.31	5.86			12.43	13.23	14.93
		velocity	7.19	8.71	8.47	8.18	8.08		7.88	7.85	7.59	6.99	6.59	6.83	7.59		8.45	7.94	7.03
H1 lead leg		strides		15	15	15	15		15	15	15	16	17		138				
Miyazaki, Takumi (JPN) (2001		time	6.37	10.61	14.96	19.38	23.92		28.60	33.15	37.91	42.80	47.69		53.26	2 / 5			
reaction time		interval		4.24	4.35	4.42	4.54		4.68	4.55	4.76	4.89	4.89	5.57			13.01	13.77	14.54
		velocity	7.06	8.25	8.05	7.92	7.71		7.48	7.69	7.35	7.16	7.16	7.18	7.51		8.07	7.63	7.22
H1 lead leg		strides		15	15	15	15		15	15	15	15	15		135				
Fukamachi, Hidai (JPN) (200		time	6.31	10.39	14.51	18.74	23.13		27.79	32.52	37.37	42.60	47.96		54.32	8 / 6			
reaction time		interval		4.08	4.12	4.23	4.39		4.66	4.73	4.85	5.23	5.36	6.36			12.43	13.78	15.44
		velocity	7.13	8.58	8.50	8.27	7.97		7.51	7.40	7.22	6.69	6.53	6.29	7.36		8.45	7.62	6.80
H1 lead leg		strides		15	15	15	15		16	16	16	17	17		142				
Takahasi, Ryosuke (JPN) (20		time	6.25	10.43	14.70	19.06	23.65		28.43	33.22	38.12	43.20	48.56		55.14	7 / 7			
reaction time		interval		4.18	4.27	4.36	4.59		4.78	4.79	4.90	5.08	5.36	6.58			12.81	14.16	15.34
		velocity	7.20	8.37	8.20	8.03	7.63		7.32	7.31	7.14	6.89	6.53	6.08	7.25		8.20	7.42	6.84
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Yamashina, Shinnosuke (JPI		time	6.33	10.56	14.78	19.11	23.70		28.56	33.50	38.49	43.69	49.11		55.20	1 / 8			
reaction time		interval		4.23	4.22	4.33	4.59		4.86	4.94	4.99	5.20	5.42	6.09			12.78	14.39	15.61
		velocity	7.11	8.27	8.29	8.08	7.63		7.20	7.09	7.01	6.73	6.46	6.57	7.25		8.22	7.30	6.73
H1 lead leg		strides		14	14	14	14		15	15	15	15	16		132				

2019 Chinese World Championship Trials (Shenyang, CHN)

FINAL date 03-Aug-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Liu Yangyang (CHN) (1995)		time	6.26	10.30	14.46	18.64	22.97		27.36	31.80	36.20	40.64	45.16		50.32	7 / 1			
reaction time	0.177	interval		4.04	4.16	4.18	4.33		4.39	4.44	4.40	4.44	4.52	5.16	PB		12.38	13.16	13.36
		velocity	7.19	8.66	8.41	8.37	8.08		7.97	7.88	7.95	7.88	7.74	7.75	7.95		8.48	7.98	7.86
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Yang Baichuan (CHN) (1995)		time	6.12	10.14	14.30	18.56	22.92		27.25	31.68	36.21	40.78	45.55		50.85	6 / 2			
reaction time	0.186	interval		4.02	4.16	4.26	4.36		4.33	4.43	4.53	4.57	4.77	5.30			12.44	13.12	13.87
		velocity	7.35	8.71	8.41	8.22	8.03		8.08	7.90	7.73	7.66	7.34	7.55	7.87		8.44	8.00	7.57
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	20	178				
Li Guangzhen (CHN) (1995)		time	6.14	10.17	14.08	18.17	22.59		27.03	31.57	36.19	40.81	45.58		50.92	4 / 3			
reaction time	0.174	interval		4.03	3.91	4.09	4.42		4.44	4.54	4.62	4.62	4.77	5.34	PB		12.03	13.40	14.01
		velocity	7.33	8.68	8.95	8.56	7.92		7.88	7.71	7.58	7.58	7.34	7.49	7.86		8.73	7.84	7.49
H1 lead leg	L	strides	22	14	14	13	14		14	15	15	15	15	18	169				
Wang Hongwen (CHN) (200(		time	6.27	10.22	14.21	18.27	22.42		26.82	31.36	36.00	40.74	45.63		51.31	2 / 4			
reaction time	0.217	interval		3.95	3.99	4.06	4.15		4.40	4.54	4.64	4.74	4.89	5.68	PB		12.00	13.09	14.27
		velocity	7.18	8.86	8.77	8.62	8.43		7.95	7.71	7.54	7.38	7.16	7.04	7.80		8.75	8.02	7.36
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	18	169				
Zhuang Linfei (CHN) (1996)		time	6.28	10.20	14.22	18.38	22.66		27.12	31.65	36.31	41.06	45.98		51.60	8 / ~~5~~			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.256	interval		3.92	4.02	4.16	4.28	4.46	4.53	4.66	4.75	4.92	5.62	DQ		12.10	13.27	14.33
		velocity	7.17	8.93	8.71	8.41	8.18	7.85	7.73	7.51	7.37	7.11	7.12	7.75		8.68	7.91	7.33
H1 lead leg	L	strides	21	13	13	14	14	14	14	15	15	15	18.5	166.5				
Cui Caizhuang (CHN) (1995)		time	6.21	10.18	14.20	18.35	22.56	27.01	31.70	36.48	41.31	46.28		51.89	1 / ~~6~~ 5			
reaction time	0.194	interval		3.97	4.02	4.15	4.21	4.45	4.69	4.78	4.83	4.97	5.61			12.14	13.35	14.58
		velocity	7.25	8.82	8.71	8.43	8.31	7.87	7.46	7.32	7.25	7.04	7.13	7.71		8.65	7.87	7.20
H1 lead leg	R	strides	22	14	14	14	14	15	15	15	15	15	18.8	171.8				
Fu Jiaho (CHN) (1999)		time	6.30	10.36	14.56	18.79	23.16	27.70	32.38	37.10	41.90	46.91		52.81	5 / ~~7~~ 6			
reaction time	0.193	interval		4.06	4.20	4.23	4.37	4.54	4.68	4.72	4.80	5.01	5.90			12.49	13.59	14.53
		velocity	7.14	8.62	8.33	8.27	8.01	7.71	7.48	7.42	7.29	6.99	6.78	7.57		8.41	7.73	7.23
H1 lead leg	L	strides	22	14	14	14	14	15	15	15	15	16	20	174				

Heat 2

date 03-Aug-19 *CAA Hurdle Development (2019)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Xie Zhiyu (CHN) (2000)		time	6.44	10.63	14.77	19.04	23.42		27.91	32.72	37.45	42.23	47.05		52.42	4 / 1			
reaction time	0.228	interval		4.19	4.14	4.27	4.38		4.49	4.81	4.73	4.78	4.82	5.37			12.60	13.68	14.33
		velocity	6.99	8.35	8.45	8.20	7.99		7.80	7.28	7.40	7.32	7.26	7.45	7.63		8.33	7.68	7.33
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17	159				
Yang Baichuan (CHN) (1995)		time	6.29	10.36	14.56	18.80	23.21		27.80	32.47	37.23	42.10	47.26		53.14	7 / 2			
reaction time	0.194	interval		4.07	4.20	4.24	4.41		4.59	4.67	4.76	4.87	5.16	5.88			12.51	13.67	14.79
		velocity	7.15	8.60	8.33	8.25	7.94		7.63	7.49	7.35	7.19	6.78	6.80	7.53		8.39	7.68	7.10
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	20	178				
Zhuang Linfei (CHN) (1996)		time	6.57	10.76	15.16	19.67	24.36		29.29	34.18	38.94	43.72	48.45		53.76	5 / 3			
reaction time	0.260	interval		4.19	4.40	4.51	4.69		4.93	4.89	4.76	4.78	4.73	5.31			13.10	14.51	14.27
		velocity	6.85	8.35	7.95	7.76	7.46		7.10	7.16	7.35	7.32	7.40	7.53	7.44		8.02	7.24	7.36
H1 lead leg	L	strides	21	13	13	14	14		15	15	15	15	15	17.5	167.5				
Wang Hongwen (CHN) (200		time	6.71	11.06	15.48	19.96	24.50		29.11	33.98	38.87	43.70	48.54		53.92	6 / 4			
reaction time	0.268	interval		4.35	4.42	4.48	4.54		4.61	4.87	4.89	4.83	4.84	5.38			13.25	14.02	14.56
		velocity	6.71	8.05	7.92	7.81	7.71		7.59	7.19	7.16	7.25	7.23	7.43	7.42		7.92	7.49	7.21
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	18	169				
Cui Caizhuang (CHN) (1995)		time	6.52	10.78	15.12	19.56	24.08		28.84	33.68	38.55	43.46	48.46		54.03	8 / 5			
reaction time	0.228	interval		4.26	4.34	4.44	4.52		4.76	4.84	4.87	4.91	5.00	5.57			13.04	14.12	14.78
		velocity	6.90	8.22	8.06	7.88	7.74		7.35	7.23	7.19	7.13	7.00	7.18	7.40		8.05	7.44	7.10
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	20	177				
Long Wei (CHN) (1997)		time	7.01	11.70	16.40	21.15	26.09		31.31	36.89	42.34		53.38		59.62	3 / 6			
reaction time	0.252	interval		4.69	4.70	4.75	4.94		5.22	5.58	5.45		11.04	6.24			14.14	15.74	16.49
		velocity	6.42	7.46	7.45	7.37	7.09		6.70	6.27	6.42		6.34	6.41	6.71		7.43	6.67	6.37
H1 lead leg	L	strides	22	15	15	15	15		15	17	17			19.2	150.2				

Heat 1

date 03-Aug-19 *CAA Hurdle Development (2019)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Guangzhen (CHN) (1995)		time	6.40	10.63	14.88	19.12	23.40		27.75	32.13	36.64	41.60	46.52		51.88	6 / 1			
reaction time	0.186	interval		4.23	4.25	4.24	4.28		4.35	4.38	4.51	4.96	4.92	5.36	PB		12.72	13.01	14.39
		velocity	7.03	8.27	8.24	8.25	8.18		8.05	7.99	7.76	7.06	7.11	7.46	7.71		8.25	8.07	7.30
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	18	171				
Fu Jiaho (CHN) (1999)		time	6.35	10.54	14.85	19.14	23.46		28.09	32.82	37.52	42.32	47.33		52.83	3 / 2			
reaction time	0.183	interval		4.19	4.31	4.29	4.32		4.63	4.73	4.70	4.80	5.01	5.50			12.79	13.68	14.51
		velocity	7.09	8.35	8.12	8.16	8.10		7.56	7.40	7.45	7.29	6.99	7.27	7.57		8.21	7.68	7.24
H1 lead leg	L	strides	22	14	14	14	15		15	16	15	16	16	18.5	175.5				
Liu Yangyang (CHN) (1995)		time	6.66	10.90	15.28	19.68	24.20		28.90	33.58	38.32	43.10	48.08		54.44	8 / 3			
reaction time	0.333	interval		4.24	4.38	4.40	4.52		4.70	4.68	4.74	4.78	4.98	6.36			13.02	13.90	14.50
		velocity	6.76	8.25	7.99	7.95	7.74		7.45	7.48	7.38	7.32	7.03	6.29	7.35		8.06	7.55	7.24
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Wang Yijie (CHN) (1997)		time	6.85	11.40	16.12	20.75	25.58		30.50	35.52	40.58	45.70	51.28		58.62	7 / 4			
reaction time	0.318	interval		4.55	4.72	4.63	4.83		4.92	5.02	5.06	5.12	5.58	7.34			13.90	14.77	15.76
		velocity	6.57	7.69	7.42	7.56	7.25		7.11	6.97	6.92	6.84	6.27	5.45	6.82		7.55	7.11	6.66
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	21	179				
Wang Daojun (CHN) (2000)		time	6.28	10.47	14.61	18.78	23.00		27.38	31.86	36.42	42.82	50.44		58.75	5 / 5			
reaction time	0.229	interval		4.19	4.14	4.17	4.22		4.38	4.48	4.56	6.40	7.62	8.31			12.50	13.08	18.58
		velocity	7.17	8.35	8.45	8.39	8.29		7.99	7.81	7.68	5.47	4.59	4.81	6.81		8.40	8.03	5.65
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	17	19	21.5	179.5				
Xu Zhihang (CHN) (1997)		time	6.72	11.31											dnf	4 / --			
reaction time		interval		4.59															
		velocity	6.70	7.63															
H1 lead leg	L	strides	22	15															

2019 Norwegian National Championships (Hamar, NOR) (TV Analysis)

FINAL date 02-Aug-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.76	9.40	13.16	17.02	21.00		25.08	29.28	33.56	37.96	42.36		47.43	7 / 1			
reaction time		interval		3.64	3.76	3.86	3.98		4.08	4.20	4.28	4.40	4.40	5.07			11.26	12.26	13.08
		velocity	7.81	9.62	9.31	9.07	8.79		8.58	8.33	8.18	7.95	7.95	7.89	8.43		9.33	8.56	8.03
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	13	17.2	154.2				

2019 Müller Anniversary Games (London, GBR) (TV Analysis)

FINAL date 20-Jul-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.72	9.24	12.84	16.56	20.40	22.0	24.44	28.56	32.88	37.28	41.92		47.12	7 / 1			
reaction time	0.160	interval		3.52	3.60	3.72	3.84		4.04	4.12	4.32	4.40	4.64	5.20	AR PB		10.84	12.00	13.36
		velocity	7.87	9.94	9.72	9.41	9.11	9.09	8.66	8.50	8.10	7.95	7.54	7.69	8.49		9.69	8.75	7.86
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	14	18	156				
Copello, Yasmani (TUR) (198		time	5.96	9.72	13.52	17.44	21.48	23.1	25.60		34.40	38.96	43.64		48.93	4 / 2			
reaction time	0.183	interval		3.76	3.80	3.92	4.04		4.12		8.80	4.56	4.68	5.29			11.48		
		velocity	7.55	9.31	9.21	8.93	8.66	8.66	8.50		7.95	7.68	7.48	7.56	8.17		9.15		
H1 lead leg	R	strides	20	13	13	13	13		13			14	14	17.7	130.7				
Lattin, Amere (USA) (1997)		time	5.88	9.56	13.32	17.16	21.12	22.9	25.28		34.20	38.96	43.80		49.18	8 / 3			
reaction time	0.140	interval		3.68	3.76	3.84	3.96		4.16		8.92	4.76	4.84	5.38			11.28		
		velocity	7.65	9.51	9.31	9.11	8.84	8.73	8.41		7.85	7.35	7.23	7.43	8.13		9.31		
H1 lead leg	L	strides	21	13	13	13	13		13	13		15	15	17.7	146.7				
Robinson, Byron (USA) (199		time	5.84	9.52	13.32	17.28	21.36	23.0	25.52		34.00	38.52	43.32		49.29	5 / 4			
reaction time	0.154	interval		3.68	3.80	3.96	4.08		4.16		8.48	4.52	4.80	5.97			11.44		
		velocity	7.71	9.51	9.21	8.84	8.58	8.70	8.41		8.25	7.74	7.29	6.70	8.12		9.18		
H1 lead leg	L	strides	22	15	15	15	15		15			15	15	20	147				
Mägi, Rasmus (EST) (1992)		time	6.12	9.92	13.72	17.64	21.76	23.5	25.96		34.88	39.52			49.71	9 / 5			
reaction time	0.158	interval		3.80	3.80	3.92	4.12		4.20		8.92	4.64					11.52		
		velocity	7.35	9.21	9.21	8.93	8.50	8.51	8.33		7.85	7.54			8.05		9.11		
H1 lead leg	L	strides	21	13	13	13	13		13			14			100				
Hyde, Jaheel (JAM) (1997)		time	5.96	9.80	13.80	17.76	21.88	23.6	26.16		34.92	39.56	44.28		49.79	2 / 6			
reaction time	0.159	interval		3.84	4.00	3.96	4.12		4.28		8.76	4.64	4.72	5.51			11.80		
		velocity	7.55	9.11	8.75	8.84	8.50	8.47	8.18		7.99	7.54	7.42	7.26	8.03		8.90		
H1 lead leg	L	strides	22	14	14	13	13		14			15	15	18	138				
Gibson, Jeffery (BAH) (1990)		time	6.04	9.88	13.84	17.84	22.00	23.8	26.24		35.12	39.76	44.44		49.88	1 / 7			
reaction time	0.153	interval		3.84	3.96	4.00	4.16		4.24		8.88	4.64	4.68	5.44			11.80		
		velocity	7.45	9.11	8.84	8.75	8.41	8.40	8.25		7.88	7.54	7.48	7.35	8.02		8.90		
H1 lead leg	R	strides	20	13	13	13	13					14	14	17.7	117.7				
McAlister, Chris (GBR) (1995		time	6.28	10.08	14.04	18.00	22.12	23.8	26.28		35.04	39.60	44.40		49.93	3 / 8			
reaction time	0.179	interval		3.80	3.96	3.96	4.12		4.16		8.76	4.56	4.80	5.53			11.72		
		velocity	7.17	9.21	8.84	8.84	8.50	8.40	8.41		7.99	7.68	7.29	7.23	8.01		8.96		
H1 lead leg	R	strides	22	14	14	14	14		14			15	15	19.2	141.2				
McMaster, Kyron (IVB) (1997		time	5.88												dnf	6 / --			
reaction time	0.190	interval																	
		velocity	7.65																
H1 lead leg	L	strides	21																

2019 Chinese National Championships (Shenyang, CHN)

FINAL date 10-Jul-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Xie Zhiyu (CHN) (2000)		time	6.27	10.14	14.03	18.00	22.05		26.26	30.80	35.25	39.97	44.69		50.01	5 / 1			
reaction time	0.304	interval		3.87	3.89	3.97	4.05		4.21	4.54	4.45	4.72	4.72	5.32	PB		11.73	12.80	13.89
		velocity	7.18	9.04	9.00	8.82	8.64		8.31	7.71	7.87	7.42	7.42	7.52	8.00		8.95	8.20	7.56
H1 lead leg	L	strides	22	13	13	13	13		13	14	14	14	14	17.5	160.5				
Wang Yijie (CHN) (1997)		time	6.02	9.93	13.84	17.92	22.08		26.44	30.85	35.39	39.97	44.69		50.04	6 / ~~2~~			
reaction time	0.175	interval		3.91	3.91	4.08	4.16		4.36	4.41	4.54	4.58	4.72	5.35	DQ		11.90	12.93	13.84
		velocity	7.48	8.95	8.95	8.58	8.41		8.03	7.94	7.71	7.64	7.42	7.48	7.99		8.82	8.12	7.59
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	17.5	170.5				
Cai Jungi (CHN) (1996)		time	6.24	10.21	14.36	18.40	22.50		26.74	31.05	35.47	40.03	44.86		50.46	3 / ~~3~~ 2			
reaction time	0.196	interval		3.97	4.15	4.04	4.10		4.24	4.31	4.42	4.56	4.83	5.60			12.16	12.65	13.81
		velocity	7.21	8.82	8.43	8.66	8.54		8.25	8.12	7.92	7.68	7.25	7.14	7.93		8.63	8.30	7.60
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19.5	176.5				
Xu Zhihang (CHN) (1997)		time	6.26	10.26	14.37	18.48	22.65		27.06	31.56	36.17	40.82	45.55		50.81	4 / ~~4~~ 3			
reaction time	0.167	interval		4.00	4.11	4.11	4.17		4.41	4.50	4.61	4.65	4.73	5.26			12.22	13.08	13.99
		velocity	7.19	8.75	8.52	8.52	8.39		7.94	7.78	7.59	7.53	7.40	7.60	7.87		8.59	8.03	7.51
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18	170				
Yang Baichuan (CHN) (1995)		time	6.12	9.96	13.97	18.04	22.19		26.44	30.88	35.47	40.24	45.30		50.93	1 / ~~5~~ 4			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.206	interval		3.84	4.01	4.07	4.15	4.25	4.44	4.59	4.77	5.06	5.63			11.92	12.84	14.42
		velocity	7.35	9.11	8.73	8.60	8.43	8.24	7.88	7.63	7.34	6.92	7.10	7.85		8.81	8.18	7.28
H1 lead leg	L	strides	23	15	15	15	15	15	15	15	15	15	20.5	178.5				
Zhuang Linfei (CHN) (1996)		time	6.20	10.08	14.02	18.06	22.21	26.60	31.08	35.76	40.56	45.45		50.99	7 / ~~6~~ 5			
reaction time	0.250	interval		3.88	3.94	4.04	4.15	4.39	4.48	4.68	4.80	4.89	5.54			11.86	13.02	14.37
		velocity	7.26	9.02	8.88	8.66	8.43	7.97	7.81	7.48	7.29	7.16	7.22	7.84		8.85	8.06	7.31
H1 lead leg	L	strides	21	13	13	14	14	14	14	15	15	15	17.8	165.8				
Wang Daojun (CHN) (2000)		time	6.12	10.17	14.25	18.40	22.59	26.96	31.56	36.22	40.94	45.70		51.23	2 / ~~7~~ 6			
reaction time	0.216	interval		4.05	4.08	4.15	4.19	4.37	4.60	4.66	4.72	4.76	5.53			12.28	13.16	14.14
		velocity	7.35	8.64	8.58	8.43	8.35	8.01	7.61	7.51	7.42	7.35	7.23	7.81		8.55	7.98	7.43
H1 lead leg	L	strides	22	15	15	14	14	15	15	15	15	15	18.3	173.3				
Liu Yangyang (CHN) (1995)		time	6.45	10.56	14.80	19.22	23.70	28.28	32.83	37.46	42.06	46.70		52.00	8 / ~~8~~ 7			
reaction time	0.313	interval		4.11	4.24	4.42	4.48	4.58	4.55	4.63	4.60	4.64	5.30			12.77	13.61	13.87
		velocity	6.98	8.52	8.25	7.92	7.81	7.64	7.69	7.56	7.61	7.54	7.55	7.69		8.22	7.71	7.57
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	15	17.8	174.8				

Heat 2

date 09-Jul-19 — *CAA Hurdle Development (2019)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Guangzhen (CHN) (1995)		time	6.45	10.51	14.59	18.73	22.86		27.15	31.53	36.02	40.62	45.36		50.83	3 / ~~1~~			
reaction time	0.276	interval		4.06	4.08	4.14	4.13		4.29	4.38	4.49	4.60	4.74	5.47	DQ		12.28	12.80	13.83
		velocity	6.98	8.62	8.58	8.45	8.47		8.16	7.99	7.80	7.61	7.38	7.31	7.87		8.55	8.20	7.59
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	17.5	168.5				
Xu Zhihang (CHN) (1997)		time	6.22	10.20	14.28	18.39	22.58		26.96	31.42	35.96	40.64	45.56		51.20	7 / ~~2~~ 1			
reaction time	0.158	interval		3.98	4.08	4.11	4.19		4.38	4.46	4.54	4.68	4.92	5.64			12.17	13.03	14.14
		velocity	7.23	8.79	8.58	8.52	8.35		7.99	7.85	7.71	7.48	7.11	7.09	7.81		8.63	8.06	7.43
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	16	19	172				
Cai Jungi (CHN) (1996)		time	6.35	10.41	14.49	18.69	22.90		27.21	31.60	36.06	40.62	45.36		51.22	6 / ~~3~~ 2			
reaction time	0.189	interval		4.06	4.08	4.20	4.21		4.31	4.39	4.46	4.56	4.74	5.86			12.34	12.91	13.76
		velocity	7.09	8.62	8.58	8.33	8.31		8.12	7.97	7.85	7.68	7.38	6.83	7.81		8.51	8.13	7.63
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19.5	176.5				
Liu Yangyang (CHN) (1995)		time	6.36	10.39	14.56	18.81	23.17		27.58	32.14	36.77	41.46	46.13		51.32	2 / ~~4~~ 3			
reaction time	0.216	interval		4.03	4.17	4.25	4.36		4.41	4.56	4.63	4.69	4.67	5.19	PB		12.45	13.33	13.99
		velocity	7.08	8.68	8.39	8.24	8.03		7.94	7.68	7.56	7.46	7.49	7.71	7.79		8.43	7.88	7.51
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Wang Hongwen (CHN) (200		time	6.47	10.41	14.43	18.55	22.76		27.09	31.78	36.50	41.36	46.33		52.00	1 / ~~5~~ 4			
reaction time	0.256	interval		3.94	4.02	4.12	4.21		4.33	4.69	4.72	4.86	4.97	5.67			12.08	13.23	14.55
		velocity	6.96	8.88	8.71	8.50	8.31		8.08	7.46	7.42	7.20	7.04	7.05	7.69		8.69	7.94	7.22
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	18	169				
Wang Siqing (CHN) (1999)		time	6.37	10.41	14.65	18.94	23.31		27.79	32.32	36.99	41.76	46.58		52.12	4 / ~~6~~ 5			
reaction time	0.197	interval		4.04	4.24	4.29	4.37		4.48	4.53	4.67	4.77	4.82	5.54	PB		12.57	13.38	14.26
		velocity	7.06	8.66	8.25	8.16	8.01		7.81	7.73	7.49	7.34	7.26	7.22	7.67		8.35	7.85	7.36
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	16	19.2	177.2				
Fu Jiaho (CHN) (1999)		time	6.37	10.43	14.64	18.88	23.22		27.69	32.32	37.05	41.79	46.65		52.29	5 / ~~7~~ 6			
reaction time	0.232	interval		4.06	4.21	4.24	4.34		4.47	4.63	4.73	4.74	4.86	5.64			12.51	13.44	14.33
		velocity	7.06	8.62	8.31	8.25	8.06		7.83	7.56	7.40	7.38	7.20	7.09	7.65		8.39	7.81	7.33
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	16	20	174				

Heat 1

date 09-Jul-19 — *CAA Hurdle Development (2019)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Wang Yijie (CHN) (1997)		time	6.08	10.05	13.99	18.07	22.19		26.54	30.95	35.50	40.21	45.06		50.72	6 / 1			
reaction time	0.166	interval		3.97	3.94	4.08	4.12		4.35	4.41	4.55	4.71	4.85	5.66	PB		11.99	12.88	14.11
		velocity	7.40	8.82	8.88	8.58	8.50		8.05	7.94	7.69	7.43	7.22	7.07	7.89		8.76	8.15	7.44
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	18.8	171.8				
Xie Zhiyu (CHN) (2000)		time	6.44	10.48	14.50	18.52	22.66		26.94	31.48	35.98	40.62	45.34		50.85	7 / 2			
reaction time	0.293	interval		4.04	4.02	4.02	4.14		4.28	4.54	4.50	4.64	4.72	5.51	PB		12.08	12.96	13.86
		velocity	6.99	8.66	8.71	8.71	8.45		8.18	7.71	7.78	7.54	7.42	7.26	7.87		8.69	8.10	7.58
H1 lead leg	L	strides	22	13	13	13	13		13	14	14	14	14	17.5	160.5				
Zhuang Linfei (CHN) (1996)		time	6.20	10.09	14.08	18.22	22.43		26.78	31.20	35.75	40.46	45.33		50.98	5 / 3			
reaction time	0.199	interval		3.89	3.99	4.14	4.21		4.35	4.42	4.55	4.71	4.87	5.65	PB		12.02	12.98	14.13
		velocity	7.26	9.00	8.77	8.45	8.31		8.05	7.92	7.69	7.43	7.19	7.08	7.85		8.74	8.09	7.43
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	19	169				
Yang Baichuan (CHN) (1995)		time	6.32	10.36	14.59	18.84	23.11		27.39	31.80	36.27	40.89	45.76		51.20	1 / 4			
reaction time	0.218	interval		4.04	4.23	4.25	4.27		4.28	4.41	4.47	4.62	4.87	5.44			12.52	12.96	13.96
		velocity	7.12	8.66	8.27	8.24	8.20		8.18	7.94	7.83	7.58	7.19	7.35	7.81		8.39	8.10	7.52
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	20.3	178.3				
Wang Daojun (CHN) (2000)		time	6.14	10.18	14.18	18.30	22.51		26.90	31.48	36.05	40.79	45.61		51.20	2 / 5			

reaction time	0.218	interval		4.04	4.00	4.12	4.21	4.39	4.58	4.57	4.74	4.82	5.59	PB		12.16	13.18	14.13
		velocity	7.33	8.66	8.75	8.50	8.31	7.97	7.64	7.66	7.38	7.26	7.16	7.81		8.63	7.97	7.43
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	18.5	170.5				
Long Wei (CHN) (1997)		time	6.04	10.08	14.15	18.28	22.54	26.89	31.28	35.85	40.61	45.58		51.39	4 / 6			
reaction time	0.188	interval		4.04	4.07	4.13	4.26	4.35	4.39	4.57	4.76	4.97	5.81	PB		12.24	13.00	14.30
		velocity	7.45	8.66	8.60	8.47	8.22	8.05	7.97	7.66	7.35	7.04	6.88	7.78		8.58	8.08	7.34
H1 lead leg	L	strides	21	15	15	15	15	15	15	15	15	15	18.8	174.8				
Shang Shou (CHN) (1995)		time	6.54	10.71	14.92	19.04	23.11	27.54	32.06	36.75	41.49	46.46		52.22	8 / 7			
reaction time	0.225	interval		4.17	4.21	4.12	4.07	4.43	4.52	4.69	4.74	4.97	5.76			12.50	13.02	14.40
		velocity	6.88	8.39	8.31	8.50	8.60	7.90	7.74	7.46	7.38	7.04	6.94	7.66		8.40	8.06	7.29
H1 lead leg	L	strides	22	15	15	15	14	15	14	15	15	15	18	173				

2019 Prefontaine Classic (Stanford, CA) (TV Analysis)

FINAL date 30-Jun-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.83	9.53	13.33	17.30	21.33		25.33	29.43	33.63	37.85	42.10		47.16	5 / 1			
reaction time	0.216	interval		3.70	3.80	3.97	4.03		4.00	4.10	4.20	4.22	4.25	5.06			11.47	12.13	12.67
		velocity	7.72	9.46	9.21	8.82	8.68		8.75	8.54	8.33	8.29	8.24	7.91	8.48		9.15	8.66	8.29
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16.2	153.2				
McMaster, Kyron (IVB) (1997		time	5.93	9.60	13.50	17.53	21.56		25.70	30.00	34.33	38.86	43.40		48.94	6 / 2			
reaction time	0.268	interval		3.67	3.90	4.03	4.03		4.14	4.30	4.33	4.53	4.54	5.54			11.60	12.47	13.40
		velocity	7.59	9.54	8.97	8.68	8.68		8.45	8.14	8.08	7.73	7.71	7.22	8.17		9.05	8.42	7.84
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.5	159.5				
Copello, Yasmani (TUR) (198		time	5.90	9.73	13.63	17.63	21.70		25.86	30.36	34.90	39.46	44.00		49.37	3 / 3			
reaction time	0.201	interval		3.83	3.90	4.00	4.07		4.16	4.50	4.54	4.56	4.54	5.37			11.73	12.73	13.64
		velocity	7.63	9.14	8.97	8.75	8.60		8.41	7.78	7.71	7.68	7.71	7.45	8.10		8.95	8.25	7.70
H1 lead leg	R	strides	20	14	13	13	13		13	14	14		14	17.5	145.5				
Kendziera, Dave (USA) (1994		time	5.73	9.50	13.43	17.43	21.46		25.70	30.10	34.66	39.30	43.97		49.46	7 / 4			
reaction time	0.247	interval		3.77	3.93	4.00	4.03		4.24	4.40	4.56	4.64	4.67	5.49			11.70	12.67	13.87
		velocity	7.85	9.28	8.91	8.75	8.68		8.25	7.95	7.68	7.54	7.49	7.29	8.09		8.97	8.29	7.57
H1 lead leg	R	strides	20	13	13	13	13		13	13	14		15		127				
Holmes, TJ (USA) (1995)		time	5.90	9.46	13.30	17.13	21.10		25.46	29.86	34.56	39.16	44.03		49.79	8 / 5			
reaction time	0.282	interval		3.56	3.84	3.83	3.97		4.36	4.40	4.70	4.60	4.87	5.76			11.23	12.73	14.17
		velocity	7.63	9.83	9.11	9.14	8.82		8.03	7.95	7.45	7.61	7.19	6.94	8.03		9.35	8.25	7.41
H1 lead leg	L	strides	20	13		13	13		14	14	14		15		116				
Rosser, Khallifah (USA) (199		time	5.93	9.53	13.36	17.26			25.43	29.80	34.36	39.10	43.96		49.87	9 / 6			
reaction time	0.361	interval		3.60	3.83	3.90			8.17	4.37	4.56	4.74	4.86	5.91			11.33	12.54	14.16
		velocity	7.59	9.72	9.14	8.97			8.57	8.01	7.68	7.38	7.20	6.77	8.02		9.27	8.37	7.42
H1 lead leg	R	strides	21	13		13				14	15		15		91				
Lattin, Amere (USA) (1997)		time	5.73	9.43	13.33	17.26	21.26		25.50	30.10	34.80	39.53	44.36		50.01	1 / 7			
reaction time	0.183	interval		3.70	3.90	3.93	4.00		4.24	4.60	4.70	4.73	4.83	5.65			11.53	12.84	14.26
		velocity	7.85	9.46	8.97	8.91	8.75		8.25	7.61	7.45	7.40	7.25	7.08	8.00		9.11	8.18	7.36
H1 lead leg	L	strides	21	13		13	13		13	15	15		15		118				
Valliant, Ludvy (FRA) (1995)		time	5.90	9.66	13.50	17.43	21.53		25.76	30.26	34.86	39.63	44.46		50.23	2 / 8			
reaction time	0.218	interval		3.76	3.84	3.93	4.10		4.23	4.50	4.60	4.77	4.83	5.77			11.53	12.83	14.20
		velocity	7.63	9.31	9.11	8.91	8.54		8.27	7.78	7.61	7.34	7.25	6.93	7.96		9.11	8.18	7.39
H1 lead leg	R	strides	21	13		13	13		13	14	14		14		115				
Mägi, Rasmus (EST) (1992)		time	6.06	9.93	13.96	18.03	22.16		26.43	31.00	35.50	40.13	44.80		50.25	4 / 9			
reaction time	0.208	interval		3.87	4.03	4.07	4.13		4.27	4.57	4.50	4.63	4.67	5.45			11.97	12.97	13.80
		velocity	7.43	9.04	8.68	8.60	8.47		8.20	7.66	7.78	7.56	7.49	7.34	7.96		8.77	8.10	7.61
H1 lead leg	L	strides	21	13	13	13	13		13	14	14		14		128				

2019 Japanese National Championships (Fukuoka, JPN)

FINAL date 29-Jun-19

Yamanaka (2019) - research on athlete performance and technique- 2019 data book

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	5.96	9.63	13.45	17.26	21.15		25.19	29.53	33.95	38.51	43.23		48.80	8 / 1			
reaction time	0.140	interval		3.67	3.82	3.81	3.89		4.04	4.34	4.42	4.56	4.72	5.57			11.30	12.27	13.70
		velocity	7.55	9.54	9.16	9.19	9.00		8.66	8.06	7.92	7.68	7.42	7.18	8.20		9.29	8.56	7.66
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	18.2	162.2				
Toyoda, Masaki (JPN) (1998)		time	5.92	9.74	13.61	17.65	21.69		25.88	30.16	34.53	38.99	43.68		49.05	7 / 2			
reaction time	0.172	interval		3.82	3.87	4.04	4.04		4.19	4.28	4.37	4.46	4.69	5.37	PB		11.73	12.51	13.52
		velocity	7.60	9.16	9.04	8.66	8.66		8.35	8.18	8.01	7.85	7.46	7.45	8.15		8.95	8.39	7.77
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18.5	168.5				
Matsushita, Yuki (JPN) (1991		time	6.09	9.84	13.74	17.70	21.71		25.93	30.25	34.75	39.31	43.99		49.47	6 / 3			
reaction time	0.161	interval		3.75	3.90	3.96	4.01		4.22	4.32	4.50	4.56	4.68	5.48			11.61	12.55	13.74
		velocity	7.39	9.33	8.97	8.84	8.73		8.29	8.10	7.78	7.68	7.48	7.30	8.09		9.04	8.37	7.64
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	19.2	165.2				

Nozawa, Keisuke (JPN) (1991		time	5.99	9.68	13.53	17.52	21.60		25.76	30.10	34.53	39.21	43.98		49.51	4 / 4			
reaction time	0.179	interval		3.69	3.85	3.99	4.08		4.16	4.34	4.43	4.68	4.77	5.53			11.53	12.58	13.88
		velocity	7.51	9.49	9.09	8.77	8.58		8.41	8.06	7.90	7.48	7.34	7.23	8.08		9.11	8.35	7.56
H1 lead leg	L	strides	21	13	13	14	14		14	14	14	15	15	19	166				
Oda, Masaya (JPN) (1995)		time	5.91	9.66	13.58	17.53	21.59		25.84	30.25	34.72	39.34	44.13		49.60	3 / 5			
reaction time	0.201	interval		3.75	3.92	3.95	4.06		4.25	4.41	4.47	4.62	4.79	5.47	PB		11.62	12.72	13.88
		velocity	7.61	9.33	8.93	8.86	8.62		8.24	7.94	7.83	7.58	7.31	7.31	8.06		9.04	8.25	7.56
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19.2	171.2				
Mano, Yutaro (JPN) (1996)		time	6.02	9.93	13.90	17.97	22.01		26.28	30.66	35.20	39.86	44.59		50.07	2 / 6			
reaction time	0.157	interval		3.91	3.97	4.07	4.04		4.27	4.38	4.54	4.66	4.73	5.48			11.95	12.69	13.93
		velocity	7.48	8.95	8.82	8.60	8.66		8.20	7.99	7.71	7.51	7.40	7.30	7.99		8.79	8.27	7.54
H1 lead leg	R	strides	21	14	14	14	14		15	15	15	15	15		152				
Sugai, Mitsuru (JPN) (1994)		time	6.06	9.76	13.66	17.58	20.60		25.86	30.23	34.80	39.46	44.43		50.27	5 / 7			
reaction time	0.168	interval		3.70	3.90	3.92	3.02		5.26	4.37	4.57	4.66	4.97	5.84			11.52	12.65	14.20
		velocity	7.43	9.46	8.97	8.93	11.59		6.65	8.01	7.66	7.51	7.04	6.85	7.96		9.11	8.30	7.39
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15		146				
Miyako, Kohei (JPN) (1997)		time	6.17	10.08	14.20	18.32	22.56		26.96	31.53	36.10	40.82	45.88		51.37	9 / 8			
reaction time	0.149	interval		3.91	4.12	4.12	4.24		4.40	4.57	4.57	4.72	5.06	5.49			12.15	13.21	14.35
		velocity	7.29	8.95	8.50	8.50	8.25		7.95	7.66	7.66	7.42	6.92	7.29	7.79		8.64	7.95	7.32
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15		157				

2019 Bislett Games (Oslo, NOR) (TV Analysis)

FINAL date 13-Jun-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.58	9.14	12.84	16.64	20.61	22.3	24.64	28.88	33.12	37.52	42.03		47.33	7 / 1			
reaction time	0.148	interval		3.56	3.70	3.80	3.97		4.03	4.24	4.24	4.40	4.51	5.30	AR PB		11.06	12.24	13.15
		velocity	8.06	9.83	9.46	9.21	8.82	8.97	8.68	8.25	8.25	7.95	7.76	7.55	8.45		9.49	8.58	7.98
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	18	157				
Barr, Thomas (IRL) (1992)		time	5.98	9.71	13.53		21.45	23.2	25.68	29.99	34.43	39.00	43.73		49.11	3 / 2			
reaction time	0.175	interval		3.73	3.82		7.92		4.23	4.31	4.44	4.57	4.73	5.38				29.99	13.74
		velocity	7.53	9.38	9.16		8.84	8.62	8.27	8.12	7.88	7.66	7.40	7.43	8.14			3.50	7.64
H1 lead leg	L	strides	21	13	13				13	14	14	14	15	18	135				
McMaster, Kyron (IVB) (1997		time	5.68	9.24	12.88	16.66	20.61	22.3	24.74	29.01	33.45	38.03	43.00		49.12	6 / 3			
reaction time	0.219	interval		3.56	3.64	3.78	3.95		4.13	4.27	4.44	4.58	4.97	6.12			10.98	12.35	13.99
		velocity	7.92	9.83	9.62	9.26	8.86	8.97	8.47	8.20	7.88	7.64	7.04	6.54	8.14		9.56	8.50	7.51
H1 lead leg	R	strides	20	13	12	13	13		13	14	14	14	15	18	159				
Kendziera, Dave (USA) (1994		time	5.88	9.68	13.58		21.55	23.3	25.69	30.02	34.39	39.04	43.74		49.27	4 / 4			
reaction time	0.163	interval		3.80	3.90		7.97		4.14	4.33	4.37	4.65	4.70	5.53					13.72
		velocity	7.65	9.21	8.97		8.78	8.58	8.45	8.08	8.01	7.53	7.45	7.23	8.12				7.65
H1 lead leg	R	strides	20	13	13				13	13	13	14	14	18	131				
Abe, Takatoshi (JPN) (1991)		time	6.02	9.78	13.68	17.58	21.72	23.5	25.92	30.29	34.83	39.54	44.31		49.78	8 / 5			
reaction time	0.188	interval		3.76	3.90	3.90	4.14		4.20	4.37	4.54	4.71	4.77	5.47			11.56	12.71	14.02
		velocity	7.48	9.31	8.97	8.97	8.45	8.51	8.33	8.01	7.71	7.43	7.34	7.31	8.04		9.08	8.26	7.49
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	17.5	161.5				
Dobek, Patryk (POL) (1994)		time	5.92	9.62	13.45		21.42	23.1	25.55	29.99	34.46	39.30	44.21		49.80	2 / 6			
reaction time	0.155	interval		3.70	3.83		7.97		4.13	4.44	4.47	4.84	4.91	5.59					14.22
		velocity	7.60	9.46	9.14		8.78	8.66	8.47	7.88	7.83	7.23	7.13	7.16	8.03				7.38
H1 lead leg	L	strides	20	13	13				13	14	14	15	15	18	135				
Holmes, TJ (USA) (1995)		time	6.05	9.71	13.48		21.35	23.0	25.48	29.86	34.26	39.44	44.48		50.60	5 / 7			
reaction time	0.292	interval		3.66	3.77		7.87		4.13	4.38	4.40	5.18	5.04	6.12					14.62
		velocity	7.44	9.56	9.28		8.89	8.70	8.47	7.99	7.95	6.76	6.94	6.54	7.91				7.18
H1 lead leg	L	strides	19	13	13				13	13	13	15	15	18	132				

2019 NCAA Championships (Austin, TX) (TV Analysis)

FINAL date 07-Jun-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hall, Quincy (USA) (1998)		time	6.06	9.83	13.70	17.56	21.53		25.53	29.70	34.03	38.60	43.40		48.48	5 / 1			
reaction time	0.269	interval		3.77	3.87	3.86	3.97		4.00	4.17	4.33	4.57	4.80	5.08	PB		11.50	12.14	13.70
		velocity	7.43	9.28	9.04	9.07	8.82		8.75	8.39	8.08	7.66	7.29	7.87	8.25		9.13	8.65	7.66
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	13	15	16.7	156.7				
Grimes, Norman (USA) (1998		time	5.93	9.60	13.30	17.06	20.86		24.80	29.06	33.46	38.16	42.93		48.71	3 / 2			
reaction time	0.231	interval		3.67	3.70	3.76	3.80		3.94	4.26	4.40	4.70	4.77	5.78	PB		11.13	12.00	13.87
		velocity	7.59	9.54	9.46	9.31	9.21		8.88	8.22	7.95	7.45	7.34	6.92	8.21		9.43	8.75	7.57
H1 lead leg	L	strides		13	13	13	13		13	14	14	14	14	17.5	138.5				
Lattin, Amere (USA) (1997)		time	6.00	9.76	13.63	17.50	21.40		25.46		34.20	38.83	43.56		48.72	4 / 3			
reaction time	0.212	interval		3.76	3.87	3.87	3.90		4.06		8.74	4.63	4.73	5.16	PB		11.50		

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		velocity	7.50	9.31	9.04	9.04	8.97	8.62		8.01	7.56	7.40	7.75	8.21		9.13		
H1 lead leg	L	strides	21	13	13	13	13	13			15	15	17	133				
Grant, Robert (USA) (1996)		time	6.00	9.80	13.80	17.83	21.96	26.13	30.36	34.73		43.63		48.83	7 / ~~4~~			
reaction time	0.186	interval		3.80	4.00	4.03	4.13	4.17	4.23	4.37		8.90	5.20	DQ		11.83	12.53	13.27
		velocity	7.50	9.21	8.75	8.68	8.47	8.39	8.27	8.01		7.87	7.69	8.19		8.88	8.38	7.91
H1 lead leg	R	strides		14	14	14	14	14	16	15				101				
McLaughlin, Taylor (USA) (1		time	5.96	9.66	13.40	17.23	21.16	25.20	29.46	33.96	38.50	43.33		48.85	6 / ~~5~~ 4			
reaction time	0.199	interval		3.70	3.74	3.83	3.93	4.04	4.26	4.50	4.54	4.83	5.52	PB		11.27	12.23	13.87
		velocity	7.55	9.46	9.36	9.14	8.91	8.66	8.22	7.78	7.71	7.25	7.25	8.19		9.32	8.59	7.57
H1 lead leg	R	strides		13	13	13	13	13	13	14	14	15	18	139				

2019 Golden Gala Pietro Mennea (Rome, ITA) (TV Analysis)

FINAL date 06-Jun-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (USA) (1997)		time	5.66	9.26	12.99	16.91	20.91		24.85	28.91	33.13	37.59	42.26		47.58	6 / 1			
reaction time	0.160	interval		3.60	3.73	3.92	4.00		3.94	4.06	4.22	4.46	4.67	5.32			11.25	12.00	13.35
		velocity	7.95	9.72	9.38	8.93	8.75		8.88	8.62	8.29	7.85	7.49	7.52	8.41		9.33	8.75	7.87
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	14	17	155				
Kendziera, Dave (USA) (1994		time	5.82	9.65	13.49	17.50	21.55		25.76	29.99	34.46	39.01	43.67		48.99	9 / 2			
reaction time	0.142	interval		3.83	3.84	4.01	4.05		4.21	4.23	4.47	4.55	4.66	5.32			11.68	12.49	13.68
		velocity	7.73	9.14	9.11	8.73	8.64		8.31	8.27	7.83	7.69	7.51	7.52	8.16		8.99	8.41	7.68
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	14	17	157				
Abe, Takatoshi (JPN) (1991)		time	5.87	9.62	13.49	17.56	21.66		25.88	30.19	34.79	39.40	44.09		49.57	7 / 3			
reaction time	0.164	interval		3.75	3.87	4.07	4.10		4.22	4.31	4.60	4.61	4.69	5.48			11.69	12.63	13.90
		velocity	7.67	9.33	9.04	8.60	8.54		8.29	8.12	7.61	7.59	7.46	7.30	8.07		8.98	8.31	7.55
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	15	17.5	159.5				
Barr, Thomas (IRL) (1992)		time	5.93	9.70	13.63	17.68	21.78		25.98	30.28	34.75	39.48	44.28		49.65	5 / 4			
reaction time	0.194	interval		3.77	3.93	4.05	4.10		4.20	4.30	4.47	4.73	4.80	5.37			11.75	12.60	14.00
		velocity	7.59	9.28	8.91	8.64	8.54		8.33	8.14	7.83	7.40	7.29	7.45	8.06		8.94	8.33	7.50
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	15	15	18	160				
Selmon, Kenny (USA) (1996)		time	6.00	9.78	13.63	17.56	21.60		25.72	30.03	34.55	39.37	44.25		49.83	8 / 5			
reaction time	0.228	interval		3.78	3.85	3.93	4.04		4.12	4.31	4.52	4.82	4.88	5.58			11.56	12.47	14.22
		velocity	7.50	9.26	9.09	8.91	8.66		8.50	8.12	7.74	7.26	7.17	7.17	8.03		9.08	8.42	7.38
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	15	15	17.7	160.7				
Hann, Mamadou Kasse (FRA		time	5.97	9.87	13.77	17.70	21.77		25.97	30.32	34.85	39.48	44.45		50.00	1 / 6			
reaction time	0.157	interval		3.90	3.90	3.93	4.07		4.20	4.35	4.53	4.63	4.97	5.55			11.73	12.62	14.13
		velocity	7.54	8.97	8.97	8.91	8.60		8.33	8.05	7.73	7.56	7.04	7.21	8.00		8.95	8.32	7.43
H1 lead leg	L	strides	21	14	14	13	13		14	14	14	14	15	17.7	163.7				
Bencosme, José Reynaldo (I		time	5.97	9.75	13.71	17.71	21.78		25.95	30.40	34.86	39.63	44.52		50.36	2 / 7			
reaction time	0.165	interval		3.78	3.96	4.00	4.07		4.17	4.45	4.46	4.77	4.89	5.84			11.74	12.69	14.12
		velocity	7.54	9.26	8.84	8.75	8.60		8.39	7.87	7.85	7.34	7.16	6.85	7.94		8.94	8.27	7.44
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15	18.5	161.5				
Dobek, Patryk (POL) (1994)		time	5.90	9.66	13.50	17.46	21.56		25.76	30.23	34.88	39.73	44.71		50.38	3 / 8			
reaction time	0.153	interval		3.76	3.84	3.96	4.10		4.20	4.47	4.65	4.85	4.98	5.67			11.56	12.77	14.48
		velocity	7.63	9.31	9.11	8.84	8.54		8.33	7.83	7.53	7.22	7.03	7.05	7.94		9.08	8.22	7.25
H1 lead leg	L	strides	20	13	13	13	13		14	14	15	15	15	17.7	162.7				
Mägi, Rasmus (EST) (1992)		time	6.02	9.86	13.86	17.95	22.11		26.36	30.93	35.45	40.21	45.05		50.52	4 / 9			
reaction time	0.150	interval		3.84	4.00	4.09	4.16		4.25	4.57	4.52	4.76	4.84	5.47			11.93	12.98	14.12
		velocity	7.48	9.11	8.75	8.56	8.41		8.24	7.66	7.74	7.35	7.23	7.31	7.92		8.80	8.09	7.44
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	17.5	161.5				

2019 Bauhaus Athletics (Stockholm, SWE) (TV Analysis)

FINAL date 30-May-19

Henson (2020) - Athlete First: 2019 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.73	9.33	13.10	17.00	20.93	22.5	25.00	29.16	33.40	37.86	42.48		47.85	7 / 1			
reaction time	0.146	interval		3.60	3.77	3.90	3.93		4.07	4.16	4.24	4.46	4.62	5.37			11.27	12.16	13.32
		velocity	7.85	9.72	9.28	8.97	8.91	8.89	8.60	8.41	8.25	7.85	7.58	7.45	8.36		9.32	8.63	7.88
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	17.7	156.7				
Holmes, TJ (USA) (1995)		time	5.86	9.52	13.32	17.15	21.11	22.7	25.26	29.62	34.06	38.90	43.62		49.25	6 / 2			
reaction time	0.156	interval		3.66	3.80	3.83	3.96		4.15	4.36	4.44	4.84	4.72	5.63			11.29	12.47	14.00
		velocity	7.68	9.56	9.21	9.14	8.84	8.81	8.43	8.03	7.88	7.23	7.42	7.10	8.12		9.30	8.42	7.50
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17.2	156.2				
Barr, Thomas (IRL) (1992)		time	6.06	9.85	13.96	18.00	22.00	23.7	26.36	30.76	35.33	40.26	44.93		50.28	5 / 3			
reaction time	0.196	interval		3.79	4.11	4.04	4.00		4.36	4.40	4.57	4.93	4.67	5.35			11.94	12.76	14.17
		velocity	7.43	9.23	8.52	8.66	8.75	8.44	8.03	7.95	7.66	7.10	7.49	7.48	7.96		8.79	8.23	7.41
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	16	15	18	164				

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Rodger, Sebastian (GBR) (1		time	6.16	10.06	14.13	18.20	22.30	24.0	26.63	31.06	35.50	40.13	44.93		50.50	2 / 4			
reaction time	0.139	interval		3.90	4.07	4.07	4.10		4.33	4.43	4.44	4.63	4.80	5.57			12.04	12.86	13.87
		velocity	7.31	8.97	8.60	8.60	8.54	8.33	8.08	7.90	7.88	7.56	7.29	7.18	7.92		8.72	8.16	7.57
H1 lead leg	R	strides	22	14	14	14	14		14	14		15	15	19	155				
Selmon, Kenny (USA) (1996)		time	6.13	10.10	14.10	18.06	22.16	23.8	26.46	30.90	35.40	40.40	45.43		51.15	4 / 5			
reaction time	0.185	interval		3.97	4.00	3.96	4.10		4.30	4.44	4.50	5.00	5.03	5.72			11.93	12.84	14.53
		velocity	7.34	8.82	8.75	8.84	8.54	8.40	8.14	7.88	7.78	7.00	6.96	6.99	7.82		8.80	8.18	7.23
H1 lead leg	R	strides	21	13	13	13	13		14	14	14	15	15		145				
Paul, Jacob (GBR) (1995)		time	6.06	9.96	14.20	18.33	22.56	24.3	26.97	31.50	36.10	40.96	45.80		51.29	1 / 6			
reaction time	0.185	interval		3.90	4.24	4.13	4.23		4.41	4.53	4.60	4.86	4.84	5.49			12.27	13.17	14.30
		velocity	7.43	8.97	8.25	8.47	8.27	8.23	7.94	7.73	7.61	7.20	7.23	7.29	7.80		8.56	7.97	7.34
H1 lead leg	L	strides	21	14	14	14	14		14			15	15		121				
Bergström, Carl (SWE) (200		time	5.93	9.83	14.00	18.13	22.43	24.2	26.86		35.96	40.90	45.76		51.35	8 / 7			
reaction time	0.190	interval		3.90	4.17	4.13	4.30		4.43		9.10	4.94	4.86	5.59			12.20		
		velocity	7.59	8.97	8.39	8.47	8.14	8.26	7.90		7.69	7.09	7.20	7.16	7.79		8.61		
H1 lead leg	L	strides	22	14	14	14	14		15			15	15		123				
Lahoulou, Abdelmalik (ALG)		time	6.06	9.80	13.80	17.93	22.06	23.7	26.40	31.00	35.66	40.80	45.86		51.82	3 / 8			
reaction time	0.151	interval		3.74	4.00	4.13	4.13		4.34	4.60	4.66	5.14	5.06	5.96			11.87	13.07	14.86
		velocity	7.43	9.36	8.75	8.47	8.47	8.44	8.06	7.61	7.51	6.81	6.92	6.71	7.72		8.85	8.03	7.07
H1 lead leg	L	strides	22	13	14	14	14		14	15		15	15		136				

2019 Chinese National Grand Prix 4 (Luoyang, CHN)

FINAL date 29-May-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shang Shou (CHN) (1995)		time	6.50	10.61	14.68	18.88	23.25		27.71	32.16	36.67	41.22	45.77		50.82	4 / 1			
reaction time	0.267	interval		4.11	4.07	4.20	4.37		4.46	4.45	4.51	4.55	4.55	5.05			12.38	13.28	13.61
		velocity	6.92	8.52	8.60	8.33	8.01		7.85	7.87	7.76	7.69	7.69	7.92	7.87		8.48	7.91	7.71
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	17.7	168.7				
Wang Yijie (CHN) (1997)		time	6.20	10.14	14.18	18.35	22.68		27.14	31.66	36.22	41.04	45.86		51.60	7 / 2			
reaction time	0.260	interval		3.94	4.04	4.17	4.33		4.46	4.52	4.56	4.82	4.82	5.74			12.15	13.31	14.20
		velocity	7.26	8.88	8.66	8.39	8.08		7.85	7.74	7.68	7.26	7.26	6.97	7.75		8.64	7.89	7.39
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	18.5	171.5				
Long Wei (CHN) (1997)		time	6.22	10.21	14.36	18.58	22.92		27.42	32.04	36.70	41.47	46.34		51.87	2 / 3			
reaction time	0.208	interval		3.99	4.15	4.22	4.34		4.50	4.62	4.66	4.77	4.87	5.53	PB		12.36	13.46	14.30
		velocity	7.23	8.77	8.43	8.29	8.06		7.78	7.58	7.51	7.34	7.19	7.23	7.71		8.50	7.80	7.34
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	18.2	176.2				
Cui Caizhuang (CHN) (1995)		time	6.22	10.24	14.36	18.55	22.89		27.44	32.13	36.83	41.77	46.84		52.55	5 / 4			
reaction time	0.195	interval		4.02	4.12	4.19	4.34		4.55	4.69	4.70	4.94	5.07	5.71			12.33	13.58	14.71
		velocity	7.23	8.71	8.50	8.35	8.06		7.69	7.46	7.45	7.09	6.90	7.01	7.61		8.52	7.73	7.14
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	15	18.5	171.5				
Zhuang Linfei (CHN) (1996)		time	6.42	10.46		18.86	23.34		27.95	32.64	37.43	42.35	47.28		52.76	8 / 5			
reaction time	0.298	interval		4.04		8.40	4.48		4.61	4.69	4.79	4.92	4.93	5.48			12.44	13.78	14.64
		velocity	7.01	8.66		8.33	7.81		7.59	7.46	7.31	7.11	7.10	7.30	7.58		8.44	7.62	7.17
H1 lead leg	L	strides	21	14			14		15	15	15	15	15	18	142				
Fu Jiaho (CHN) (1999)		time	6.67	11.05	15.45	19.80	24.34		29.01	33.76	38.52	43.47	48.88		54.71	1 / 6			
reaction time	0.208	interval		4.38	4.40	4.35	4.54		4.67	4.75	4.76	4.95	5.41	5.83			13.13	13.96	15.12
		velocity	6.75	7.99	7.95	8.05	7.71		7.49	7.37	7.35	7.07	6.47	6.86	7.31		8.00	7.52	6.94
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	17	19.5	174.5				

2019 Shimane High School Championships (Honshu, JPN)

FINAL date 25-May-19

Shimizu (2019) - shimane high school championships 2019 - biomechanics data analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
堀西 洸惇		time	6.70	11.11	15.54	20.16	24.80		29.83	34.87	40.00	45.09	50.24		56.04	5 / 1			
reaction time		interval		4.41	4.43	4.62	4.64		5.03	5.04	5.13	5.09	5.15	5.80			13.46	14.71	15.37
		velocity	6.72	7.94	7.90	7.58	7.54		6.96	6.94	6.82	6.88	6.80	6.90	7.14		7.80	7.14	6.83
H1 lead leg		strides	21	15	15	15	15		15	15	15	15	15	18	174				
加藤 諒介		time	6.69	10.91	15.24	19.74	24.38		29.46	34.70	40.02	45.22	50.63		56.54	6 / 2			
reaction time		interval		4.22	4.33	4.50	4.64		5.08	5.24	5.32	5.20	5.41	5.91			13.05	14.96	15.93
		velocity	6.73	8.29	8.08	7.78	7.54		6.89	6.68	6.58	6.73	6.47	6.77	7.07		8.05	7.02	6.59
H1 lead leg		strides	23	15	15	15	15		15	17	17	17	17	20	186				
鎌田 真央		time	6.85	11.41	16.12	20.94	25.90		31.07	36.30	41.54	46.77	51.99		57.61	9 / 3			
reaction time		interval		4.56	4.71	4.82	4.96		5.17	5.23	5.24	5.23	5.22	5.62			14.09	15.36	15.69
		velocity	6.57	7.68	7.43	7.26	7.06		6.77	6.69	6.68	6.69	6.70	7.12	6.94		7.45	6.84	6.69
H1 lead leg		strides	24	17	17	17	17		17	17	17	17	17	20	197				
松本 達樹		time	6.64	11.26	15.91	20.58	25.36		30.53	35.87	41.30	46.64	51.96		57.83	8 / 4			
reaction time		interval		4.62	4.65	4.67	4.78		5.17	5.34	5.43	5.34	5.32	5.87			13.94	15.29	16.09
		velocity	6.78	7.58	7.53	7.49	7.32		6.77	6.55	6.45	6.55	6.58	6.81	6.92		7.53	6.87	6.53

H1 lead leg		strides	23	17	17	17	17	17	19	19	19	19	22	206				
中井 空		time	6.55	10.89	15.44	20.23	25.18	30.38	35.88	41.47	46.91	52.33		57.91	4 / 5			
reaction time		interval		4.34	4.55	4.79	4.95	5.20	5.50	5.59	5.44	5.42	5.58			13.68	15.65	16.45
		velocity	6.87	8.06	7.69	7.31	7.07	6.73	6.36	6.26	6.43	6.46	7.17	6.91		7.68	6.71	6.38
H1 lead leg		strides	24	15	15	17	17	17	19	19	19	19	21	202				
森田 光典		time	6.57	11.04	15.66	20.46	25.28	30.28	35.55	41.42	46.86	52.43		58.05	7 / 6			
reaction time		interval		4.47	4.62	4.80	4.82	5.00	5.27	5.87	5.44	5.57	5.62			13.89	15.09	16.88
		velocity	6.85	7.83	7.58	7.29	7.26	7.00	6.64	5.96	6.43	6.28	7.12	6.89		7.56	6.96	6.22
H1 lead leg		strides	21	15	15	15	15	15	16	18	17	17	20	184				

2019 Nanjing World Challenge (Nanjing, CHN)

FINAL date 21-May-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Feng Zhiqiang (CHN) (1998)		time	6.20	10.06	13.96	17.93	22.10		26.46	31.10		40.56	45.40		50.72	2 / 7			
reaction time		interval		3.86	3.90	3.97	4.17		4.36	4.64		9.46	4.84	5.32			11.73	13.17	14.30
		velocity	7.26	9.07	8.97	8.82	8.39		8.03	7.54		7.40	7.23	7.52	7.89		8.95	7.97	7.34
H1 lead leg	L	strides		13	13	13	13		13	14				17.2	96.2				

2019 Seiko Golden Grand Prix (Osaka, JPN)

FINAL date 19-May-19

Hirokawa (2019) - research on athlete performance and technique- 2019 data book

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Toyoda, Masaki (JPN) (1998)		time	6.14	9.94	13.81	17.85	22.02		26.39	30.86	35.50	40.22	44.98		50.38	3 / 1			
reaction time	0.349	interval		3.80	3.87	4.04	4.17		4.37	4.47	4.64	4.72	4.76	5.40			11.71	13.01	14.12
		velocity	7.33	9.21	9.04	8.66	8.39		8.01	7.83	7.54	7.42	7.35	7.41	7.94		8.97	8.07	7.44
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18.5	168.5				
Nozawa, Keisuke (JPN) (1991		time	6.14	9.91	13.88	17.87	21.99		26.14	30.46	35.02	39.98	44.94		50.65	6 / 2			
reaction time	0.254	interval		3.77	3.97	3.99	4.12		4.15	4.32	4.56	4.96	4.96	5.71			11.73	12.59	14.48
		velocity	7.33	9.28	8.82	8.77	8.50		8.43	8.10	7.68	7.06	7.06	7.01	7.90		8.95	8.34	7.25
H1 lead leg	L	strides	21	14	14	14	14		14	14	14	16	15	19	169				
Suguimati, Mahau (BRA) (19		time	6.06	9.84	13.73	17.76	21.92		26.28	30.78	35.60	40.44	45.33		50.87	2 / 3			
reaction time	0.160	interval		3.78	3.89	4.03	4.16		4.36	4.50	4.82	4.84	4.89	5.54			11.70	13.02	14.55
		velocity	7.43	9.26	9.00	8.68	8.41		8.03	7.78	7.26	7.23	7.16	7.22	7.86		8.97	8.06	7.22
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	14	17.5	157.5				
Inoue, Kakeru (JPN) (1996)		time	6.09	9.94	13.86	17.87	22.06		26.34	30.86	35.57	40.44	45.35		50.97	9 / 4			
reaction time	0.175	interval		3.85	3.92	4.01	4.19		4.28	4.52	4.71	4.87	4.91	5.62			11.78	12.99	14.49
		velocity	7.39	9.09	8.93	8.73	8.35		8.18	7.74	7.43	7.19	7.13	7.12	7.85		8.91	8.08	7.25
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Chen Chieh (TPE) (1992)		time	5.92	9.58	13.37	17.18	21.20		25.41	30.03	35.00	40.09	45.20		51.05	8 / 5			
reaction time	0.190	interval		3.66	3.79	3.81	4.02		4.21	4.62	4.97	5.09	5.11	5.85			11.26	12.85	15.17
		velocity	7.60	9.56	9.23	9.19	8.71		8.31	7.58	7.04	6.88	6.85	6.84	7.84		9.33	8.17	6.92
H1 lead leg	L	strides	21	13	13	13	13		13	14	15	16	15	19	165				
Obayashi, Masayuki (JPN) (1		time	6.04	9.96	13.91	18.04	22.21		26.48	30.83	35.40	40.22	45.35		51.45	4 / 6			
reaction time	0.157	interval		3.92	3.95	4.13	4.17		4.27	4.35	4.57	4.82	5.13	6.10			12.00	12.79	14.52
		velocity	7.45	8.93	8.86	8.47	8.39		8.20	8.05	7.66	7.26	6.82	6.56	7.77		8.75	8.21	7.23
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	17	20.7	175.7				
Koech, Haron (KEN) (1990)		time	6.46	10.44	14.51	18.65	22.89		27.34	31.92	36.72	41.65	46.63		52.48	5 / 7			
reaction time	0.174	interval		3.98	4.07	4.14	4.24		4.45	4.58	4.80	4.93	4.98	5.85			12.19	13.27	14.71
		velocity	6.97	8.79	8.60	8.45	8.25		7.87	7.64	7.29	7.10	7.03	6.84	7.62		8.61	7.91	7.14
H1 lead leg	R	strides	23	13	15	13	13		15	15	15	15	15	18.7	170.7				

2019 Shanghai Diamond League (Shanghai, CHN)

Henson (2020) - Athlete First: 2019 year end hurdle report

FINAL date 18-May-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.80	9.60	13.36	17.20	21.13	23.0	25.26	29.40	33.58	37.83	42.13		47.27	4 / 1		*Henson (2020)*	
reaction time	0.201	interval		3.80	3.76	3.84	3.93		4.13	4.14	4.18	4.25	4.30	5.14			11.40	12.20	12.73
		velocity	7.76	9.21	9.31	9.11	8.91	8.70	8.47	8.45	8.37	8.24	8.14	7.78	8.46		9.21	8.61	8.25
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	13	13	17	155				
Benjamin, Rai (USA) (1997)		time	5.73	9.36	13.16	17.03	21.16	23.0	25.26	29.40	33.50	37.73	42.33		47.80	5 / 2		*Henson (2020)*	
reaction time	0.155	interval		3.63	3.80	3.87	4.13		4.10	4.14	4.10	4.23	4.60	5.47			11.30	12.37	12.93
		velocity	7.85	9.64	9.21	9.04	8.47	8.70	8.54	8.45	8.54	8.27	7.61	7.31	8.37		9.29	8.49	8.12
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	14	17	155				
																		CAA Hurdle Development (2019)	
Feng Zhiqiang (CHN) (1998)		time	6.20	10.12	14.19	18.29	22.63	24.4	27.19	31.93	36.70	41.70	46.63		52.11	2 / 8			
reaction time	0.195	interval		3.92	4.07	4.10	4.34		4.56	4.74	4.77	5.00	4.93	5.48			12.09	13.64	14.70
		velocity	7.26	8.93	8.60	8.54	8.06	8.20	7.68	7.38	7.34	7.00	7.10	7.30	7.68		8.68	7.70	7.14
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	17	161				

2019 Kinami Memorial (Osaka, JPN)

A FINAL date 06-May-19

Matsubayashi (2019) - research on athlete performance and technique- 2019 data book

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nozawa, Keisuke (JPN) (1991	time	6.04	9.79	13.61	17.45	21.47		25.53	29.76	34.18	38.84	43.76		49.52	8 / 1			
reaction time	interval		3.75	3.82	3.84	4.02		4.06	4.23	4.42	4.66	4.92	5.76			11.41	12.31	14.00
	velocity	7.45	9.33	9.16	9.11	8.71		8.62	8.27	7.92	7.51	7.11	6.94	8.08		9.20	8.53	7.50
H1 lead leg L	strides	21	14	14	14	14		14	14	15	15	15	19	169				
Matsushita, Yuki (JPN) (1991	time	6.11	9.93	13.83	17.74	21.72		25.94	30.23	34.70	39.31	44.01		49.57	3 / 2			
reaction time	interval		3.82	3.90	3.91	3.98		4.22	4.29	4.47	4.61	4.70	5.56			11.63	12.49	13.78
	velocity	7.36	9.16	8.97	8.95	8.79		8.29	8.16	7.83	7.59	7.45	7.19	8.07		9.03	8.41	7.62
H1 lead leg R	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Chen Chieh (TPE) (1992)	time	5.99	9.76	13.60	17.52	21.62		25.86	30.35	34.92	39.61	44.44		49.86	7 / 3			
reaction time	interval		3.77	3.84	3.92	4.10		4.24	4.49	4.57	4.69	4.83	5.42			11.53	12.83	14.09
	velocity	7.51	9.28	9.11	8.93	8.54		8.25	7.80	7.66	7.46	7.25	7.38	8.02		9.11	8.18	7.45
H1 lead leg L	strides	21	13	13	13	13		13	14	14	15	15	18.2	162.2				
Obayashi, Masayuki (JPN) (1	time	6.06	10.08	14.08	18.17	22.39		26.63	30.91	35.30	39.89	44.64		50.11	9 / 4			
reaction time	interval		4.02	4.00	4.09	4.22		4.24	4.28	4.39	4.59	4.75	5.47			12.11	12.74	13.73
	velocity	7.43	8.71	8.75	8.56	8.29		8.25	8.18	7.97	7.63	7.37	7.31	7.98		8.67	8.24	7.65
H1 lead leg R	strides	22	14	14	14	14		15	15	15	15	15	19	172				
Mano, Yutaro (JPN) (1996)	time	6.16	10.14	14.11	18.12	22.32		26.63	30.13	35.57	40.27	45.03		50.51	6 / 5			
reaction time	interval		3.98	3.97	4.01	4.20		4.31	3.50	5.44	4.70	4.76	5.48			11.96	12.01	14.90
	velocity	7.31	8.79	8.82	8.73	8.33		8.12	10.00	6.43	7.45	7.35	7.30	7.92		8.78	8.74	7.05
H1 lead leg R	strides	21	14	14	14	14		14	15	15	15	15	18.5	169.5				

B FINAL

date 06-May-19

Matsubayashi (2019) - research on athlete performance and technique- 2019 data book

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Sugai, Mitsuru (JPN) (1994)	time	6.09	9.91	13.90	17.85	21.94		26.23	30.50	35.07	39.72	44.54		50.16	3 / 1			
reaction time	interval		3.82	3.99	3.95	4.09		4.29	4.27	4.57	4.65	4.82	5.62			11.76	12.65	14.04
	velocity	7.39	9.16	8.77	8.86	8.56		8.16	8.20	7.66	7.53	7.26	7.12	7.97		8.93	8.30	7.48
H1 lead leg R	strides	21	13	13	13	13		14	14	15	15	15	19	165				
Maeno, Kei (JPN) (1991)	time	6.04	9.83	13.68	17.53	21.67		25.91	30.34	34.87	39.56	44.49		50.37	6 / 2			
reaction time	interval		3.79	3.85	3.85	4.14		4.24	4.43	4.53	4.69	4.93	5.88			11.49	12.81	14.15
	velocity	7.45	9.23	9.09	9.09	8.45		8.25	7.90	7.73	7.46	7.10	6.80	7.94		9.14	8.20	7.42
H1 lead leg R	strides	21	13	13	13	14		14	15	15	15	17	19.2	169.2				
Takada, Kazunari (JPN) (199	time	5.89	9.79	13.66	17.48	21.60		25.88	30.21	34.80	39.56	44.63		50.50	7 / 3			
reaction time	interval		3.90	3.87	3.82	4.12		4.28	4.33	4.59	4.76	5.07	5.87			11.59	12.73	14.42
	velocity	7.64	8.97	9.04	9.16	8.50		8.18	8.08	7.63	7.35	6.90	6.81	7.92		9.06	8.25	7.28
H1 lead leg L	strides	21	14	14	14	14		15	15	15	15	15	20	172				

2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)

A FINAL

date 03-May-19

Kobayashi (2019) - research on athlete performance and technique- 2019 data book

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nozawa, Keisuke (JPN) (1991	time	6.12	9.88	13.81	17.78	21.86		25.94	30.15	34.48	39.21	44.13		49.84	9 / 1			
reaction time	interval		3.76	3.93	3.97	4.08		4.08	4.21	4.33	4.73	4.92	5.71			11.66	12.37	13.98
	velocity	7.35	9.31	8.91	8.82	8.58		8.58	8.31	8.08	7.40	7.11	7.01	8.03		9.01	8.49	7.51
H1 lead leg L	strides	21	14	14	14	14		14	14	14	15	15	19.2	168.2				
Chen Chieh (TPE) (1992)	time	5.96	9.58	13.28	17.13	21.10		25.26	29.76	34.35	39.24	44.33		50.05	7 / 2			
reaction time	interval		3.62	3.70	3.85	3.97		4.16	4.50	4.59	4.89	5.09	5.72			11.17	12.63	14.57
	velocity	7.55	9.67	9.46	9.09	8.82		8.41	7.78	7.63	7.16	6.88	6.99	7.99		9.40	8.31	7.21
H1 lead leg L	strides	21	13	13	13	13		13	14	14	15	15	18.5	162.5				
Inoue, Kakeru (JPN) (1996)	time	6.14	9.94	13.88	17.90	21.99		26.26	30.68	35.22	39.97	44.84		50.34	8 / 3			
reaction time	interval		3.80	3.94	4.02	4.09		4.27	4.42	4.54	4.75	4.87	5.50			11.76	12.78	14.16
	velocity	7.33	9.21	8.88	8.71	8.56		8.20	7.92	7.71	7.37	7.19	7.27	7.95		8.93	8.22	7.42
H1 lead leg R	strides	21	13	13	13	13		14	14	15	15	15		146				
Mano, Yutaro (JPN) (1996)	time	6.12	10.01	13.90	17.97	22.12		26.36	30.78	35.30	40.01	44.95		50.57	5 / 4			
reaction time	interval		3.89	3.89	4.07	4.15		4.24	4.42	4.52	4.71	4.94	5.62			11.85	12.81	14.17
	velocity	7.35	9.00	9.00	8.60	8.43		8.25	7.92	7.74	7.43	7.09	7.12	7.91		8.86	8.20	7.41
H1 lead leg R	strides	21	16	16	16	16		17	17	17	19	19		174				

B FINAL

date 03-May-19

Kobayashi (2019) - research on athlete performance and technique- 2019 data book

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Obayashi, Masayuki (JPN) (1	time	6.07	10.08	14.11	18.34	22.57		26.88	31.35	35.85	40.47	45.18		50.48	6 / 1			
reaction time	interval		4.01	4.03	4.23	4.23		4.31	4.47	4.50	4.62	4.71	5.30			12.27	13.01	13.83
	velocity	7.41	8.73	8.68	8.27	8.27		8.12	7.83	7.78	7.58	7.43	7.55	7.92		8.56	8.07	7.59
H1 lead leg R	strides	22	14	14	14	14		15	15	15	15	15	19	172				

C FINAL

date 03-May-19

Kobayashi (2019) - research on athlete performance and technique- 2019 data book

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Toyoda, Masaki (JPN) (1998)	time	5.94	9.69	13.45	17.42	21.42		25.58	29.90	34.42	39.32	44.34		49.94	3 / 1			
reaction time	interval		3.75	3.76	3.97	4.00		4.16	4.32	4.52	4.90	5.02	5.60	PB		11.48	12.48	14.44
	velocity	7.58	9.33	9.31	8.82	8.75		8.41	8.10	7.74	7.14	6.97	7.14	8.01		9.15	8.41	7.27
H1 lead leg	strides		14	14	14	14		15	15	15	16	16	19	152				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Sugai, Mitsuru (JPN) (1994)		time	6.09	9.83	13.73	17.77	21.89	26.28	30.75	35.44	40.19	45.08		50.56	7 / 2			
reaction time		interval		3.74	3.90	4.04	4.12	4.39	4.47	4.69	4.75	4.89	5.48			11.68	12.98	14.33
		velocity	7.39	9.36	8.97	8.66	8.50	7.97	7.83	7.46	7.37	7.16	7.30	7.91		8.99	8.09	7.33
H1 lead leg	R	strides	22	13	13	13	13	14	14	15	15	15	18.5	165.5				

D FINAL

date 03-May-19

Kobayashi (2019) - research on athlete performance and technique- 2019 data book

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Suguimati, Mahau (BRA) (19		time	6.09	9.86	13.68	17.58	21.60		25.83	30.20	34.72	39.57	44.63		50.19	5 / 1			
reaction time		interval		3.77	3.82	3.90	4.02		4.23	4.37	4.52	4.85	5.06	5.56			11.49	12.62	14.43
		velocity	7.39	9.28	9.16	8.97	8.71		8.27	8.01	7.74	7.22	6.92	7.19	7.97		9.14	8.32	7.28
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	15	15	17.2	158.2				

2019 Asian Athletics Championships (Doha, QAT)

Sugimoto (2020) - race pattern analysis of japan's top male and female 400m hurdlers- 2019 season

FINAL

date 22-Apr-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.82	9.40	13.04	16.80	20.68		24.84	29.09	33.48	37.97	42.40		47.51	5 / 1			
reaction time	0.179	interval		3.58	3.64	3.76	3.88		4.16	4.25	4.39	4.49	4.43	5.11	CR		10.98	12.29	13.31
		velocity	7.73	9.78	9.62	9.31	9.02		8.41	8.24	7.97	7.80	7.90	7.83	8.42		9.56	8.54	7.89
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14	17.2	158.2				
Chen Chieh (TPE) (1992)		time	5.84	9.49	13.19	16.98	20.92		25.00	29.41	33.92	38.57	43.37		48.92	6 / 2			
reaction time	0.195	interval		3.65	3.70	3.79	3.94		4.08	4.41	4.51	4.65	4.80	5.55	PB		11.14	12.43	13.96
		velocity	7.71	9.59	9.46	9.23	8.88		8.58	7.94	7.76	7.53	7.29	7.21	8.18		9.43	8.45	7.52
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	17.5	161.5				
Abe, Takatoshi (JPN) (1991)		time	5.97	9.64	13.33	17.10	21.04		25.19	29.66	34.27	39.06	43.93		49.74	7 / 5			*Sugimoto (2020)*
reaction time	0.189	interval		3.67	3.69	3.77	3.94		4.15	4.47	4.61	4.79	4.87	5.81			11.13	12.56	14.27
		velocity	7.54	9.54	9.49	9.28	8.88		8.43	7.83	7.59	7.31	7.19	6.88	8.04		9.43	8.36	7.36
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				

Heat 2

date 21-Apr-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Feng Zhiqiang (CHN) (1998)		time	5.99	9.91	13.83	17.88	22.10		26.51	31.09	35.68	40.36	45.15		50.71	7 / 6			
reaction time	0.199	interval		3.92	3.92	4.05	4.22		4.41	4.58	4.59	4.68	4.79	5.56			11.89	13.21	14.06
		velocity	7.51	8.93	8.93	8.64	8.29		7.94	7.64	7.63	7.48	7.31	7.19	7.89		8.83	7.95	7.47
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15	17.5	160.5				

Heat 1

date 21-Apr-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Gong Debin (CHN) (1997)		time	5.96	9.81	13.63	17.68	21.81		26.19	30.81	35.55	40.27	45.12		50.96	1 / 4			
reaction time	0.182	interval		3.85	3.82	4.05	4.13		4.38	4.62	4.74	4.72	4.85	5.84			11.72	13.13	14.31
		velocity	7.55	9.09	9.16	8.64	8.47		7.99	7.58	7.38	7.42	7.22	6.85	7.85		8.96	8.00	7.34
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.7	170.7				

2019 Chinese National Grand Prix 2 (Huangshi, CHN)

FINAL

date 12-Apr-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Liu Yangyang (CHN) (1995)		time	6.50	10.68	15.10	19.58	24.10		28.70	33.36	38.06	42.76	47.46		52.58	4 / 1			
reaction time	0.204	interval		4.18	4.42	4.48	4.52		4.60	4.66	4.70	4.70	4.70	5.12			13.08	13.78	14.10
		velocity	6.92	8.37	7.92	7.81	7.74		7.61	7.51	7.45	7.45	7.45	7.81	7.61		8.03	7.62	7.45
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	19.2	175.2				
Wang Gouzhong (CHN) (19		time	6.24	10.38	14.71	19.19	23.77		28.31	33.00	37.70	42.43	47.26		52.79	8 / 2			
reaction time	0.208	interval		4.14	4.33	4.48	4.58		4.54	4.69	4.70	4.73	4.83	5.53			12.95	13.81	14.26
		velocity	7.21	8.45	8.08	7.81	7.64		7.71	7.46	7.45	7.40	7.25	7.23	7.58		8.11	7.60	7.36
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	19.5	175.5				
Long Wei (CHN) (1997)		time	6.19	10.19	14.45	18.71	23.14		27.68	32.30	37.09	42.04	47.06		52.83	9 / 3			
reaction time	0.250	interval		4.00	4.26	4.26	4.43		4.54	4.62	4.79	4.95	5.02	5.77			12.52	13.59	14.76
		velocity	7.27	8.75	8.22	8.22	7.90		7.71	7.58	7.31	7.07	6.97	6.93	7.57		8.39	7.73	7.11
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	19	175				
Xu Guoyu (CHN) (1997)		time	6.38	10.59	14.80	19.19	23.71		28.38	33.10	37.90	42.71	47.51		53.06	7 / 4			
reaction time	0.215	interval		4.21	4.21	4.39	4.52		4.67	4.72	4.80	4.81	4.80	5.55			12.81	13.91	14.41
		velocity	7.05	8.31	8.31	7.97	7.74		7.49	7.42	7.29	7.28	7.29	7.21	7.54		8.20	7.55	7.29
H1 lead leg	R	strides	21	15	15	15	15		15	15	15	15	16	21	178				
Yang Baichuan (CHN) (1995)		time	6.27	10.41	14.71	19.05	23.44		27.93	32.47	37.14	42.08	47.46		53.44	5 / 5			
reaction time	0.181	interval		4.14	4.30	4.34	4.39		4.49	4.54	4.67	4.94	5.38	5.98			12.78	13.42	14.99
		velocity	7.18	8.45	8.14	8.06	7.97		7.80	7.71	7.49	7.09	6.51	6.69	7.49		8.22	7.82	7.00
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	17	20	178				
Zhuang Linfei (CHN) (1996)		time	6.48	10.54	14.82	19.22	23.76		28.38	33.26	38.18	43.28	48.48		54.17	2 / 6			
reaction time	0.225	interval		4.06	4.28	4.40	4.54		4.62	4.88	4.92	5.10	5.20	5.69			12.74	14.04	15.22
		velocity	6.94	8.62	8.18	7.95	7.71		7.58	7.17	7.11	6.86	6.73	7.03	7.38		8.24	7.48	6.90
H1 lead leg	L	strides	21	16	16	16	16		16	16	15	15	16	19	182				
Fu Jiaho (CHN) (1999)		time	6.60	10.84	15.16	19.62	24.20		28.90	33.78	38.58	43.36	48.62		54.39	3 / 7			

reaction time	0.200	interval		4.24	4.32	4.46	4.58	4.70	4.88	4.80	4.78	5.26	5.77			13.02	14.16	14.84
		velocity	6.82	8.25	8.10	7.85	7.64	7.45	7.17	7.29	7.32	6.65	6.93	7.35		8.06	7.42	7.08
H1 lead leg	L	strides	21	16	16	16	16	15	15	15	15	15	19.2	179.2				
Wang Ziming (CHN) (1994)		time	6.37	10.51	14.75	19.09	23.66	28.48	33.44	38.54	43.81	49.30		56.18	6 / 8			
reaction time	0.242	interval		4.14	4.24	4.34	4.57	4.82	4.96	5.10	5.27	5.49	6.88			12.72	14.35	15.86
		velocity	7.06	8.45	8.25	8.06	7.66	7.26	7.06	6.86	6.64	6.38	5.81	7.12		8.25	7.32	6.62
H1 lead leg	L	strides	21	16	16	16	16	15	16	16	16	16	18.7	182.7				

2019 Chinese National Grand Prix 1 (Zhaoqing, CHN)

FINAL date 08-Apr-19

CAA Hurdle Development (2019)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Cai Jungi (CHN) (1996)		time	6.22	10.30	14.50	18.68	22.94		27.20	31.56	36.04	40.56	45.18		50.56	5 / 1			
reaction time	0.179	interval		4.08	4.20	4.18	4.26		4.26	4.36	4.48	4.52	4.62	5.38			12.46	12.88	13.62
		velocity	7.23	8.58	8.33	8.37	8.22		8.22	8.03	7.81	7.74	7.58	7.43	7.91		8.43	8.15	7.71
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Shang Shou (CHN) (1995)		time	6.35	10.47	14.53	18.68	22.97		27.41	31.84	36.47	41.06	45.68		50.75	7 / 2			
reaction time	0.213	interval		4.12	4.06	4.15	4.29		4.44	4.43	4.63	4.59	4.62	5.07			12.33	13.16	13.84
		velocity	7.09	8.50	8.62	8.43	8.16		7.88	7.90	7.56	7.63	7.58	7.89	7.88		8.52	7.98	7.59
H1 lead leg	L	strides	22	15	16	16	16		16	16	15	15	15	18	180				
Wang Yijie (CHN) (1997)		time	6.20	10.22	14.28	18.44	22.64		26.96	31.46	36.10	40.88	45.78		51.60	3 / 3			
reaction time	0.280	interval		4.02	4.06	4.16	4.20		4.32	4.50	4.64	4.78	4.90	5.82			12.24	13.02	14.32
		velocity	7.26	8.71	8.62	8.41	8.33		8.10	7.78	7.54	7.32	7.14	6.87	7.75		8.58	8.06	7.33
H1 lead leg	L	strides	21	16	16	16	16		15	15	15	15	15	18.5	178.5				
Yang Baichuan (CHN) (1995)		time	6.20	10.12	14.20	18.38	22.60		26.88	31.36	36.10	41.04	46.24		52.06	2 / 4			
reaction time	0.202	interval		3.92	4.08	4.18	4.22		4.28	4.48	4.74	4.94	5.20	5.82			12.18	12.98	14.88
		velocity	7.26	8.93	8.58	8.37	8.29		8.18	7.81	7.38	7.09	6.73	6.87	7.68		8.62	8.09	7.06
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	16	20.5	179.5				
Liu Yangyang (CHN) (1995)		time	6.52	10.51	15.15	19.59	24.06		28.71	33.41	38.02	42.62	47.26		52.30	8 / 5			
reaction time	0.207	interval		3.99	4.64	4.44	4.47		4.65	4.70	4.61	4.60	4.64	5.04			13.07	13.82	13.85
		velocity	6.90	8.77	7.54	7.88	7.83		7.53	7.45	7.59	7.61	7.54	7.94	7.65		8.03	7.60	7.58
H1 lead leg	L	strides	22	15	16	16	16		15	15	15	15	15	18	178				
Fu Jiaho (CHN) (1999)		time	6.44	10.51	14.73	18.88	23.19		27.64	32.26	36.93	41.79	46.86		52.33	6 / 6			
reaction time	0.218	interval		4.07	4.22	4.15	4.31		4.45	4.62	4.67	4.86	5.07	5.47			12.44	13.38	14.60
		velocity	6.99	8.60	8.29	8.43	8.12		7.87	7.58	7.49	7.20	6.90	7.31	7.64		8.44	7.85	7.19
H1 lead leg	L	strides	22	16	16	16	16		16	17	17	17	17	19.5	189.5				
Zhuang Linfei (CHN) (1996)		time	6.32	10.30	14.36	18.48	22.74		27.18	31.82	36.70	41.70	46.84		52.70	4 / 7			
reaction time	0.240	interval		3.98	4.06	4.12	4.26		4.44	4.64	4.88	5.00	5.14	5.86			12.16	13.34	15.02
		velocity	7.12	8.79	8.62	8.50	8.22		7.88	7.54	7.17	7.00	6.81	6.83	7.59		8.63	7.87	6.99
H1 lead leg	L	strides	21	16	16	16	16		15	15	15	15	15	19	179				
Long Wei (CHN) (1997)		time	6.21	10.29	14.46	18.68	22.97		27.44	32.08	36.90	41.82	46.86		52.73	9 / 8			
reaction time	0.271	interval		4.08	4.17	4.22	4.29		4.47	4.64	4.82	4.92	5.04	5.87			12.47	13.40	14.78
		velocity	7.25	8.58	8.39	8.29	8.16		7.83	7.54	7.26	7.11	6.94	6.81	7.59		8.42	7.84	7.10
H1 lead leg	L	strides	21	15	15	15	15		15	15	15	15	15	19	175				

2018 National Sports Festival (Fukui, JPN)

FINAL date 08-Oct-18

Morioka (2018) - race pattern analysis of Japan's top 400m hurdles - main national competitions in 2018

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kajiki, Ryo (JPN) (1995)		time	6.04	9.86	13.76	17.73	21.83		26.15	30.64	35.14	39.78	44.50		49.61	6 / 1			
reaction time	0.190	interval		3.82	3.90	3.97	4.10		4.32	4.49	4.50	4.64	4.72	5.11			11.69	12.91	13.86
		velocity	7.45	9.16	8.97	8.82	8.54		8.10	7.80	7.78	7.54	7.42	7.83	8.06		8.98	8.13	7.58
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				

2018 IAAF Continental Cup (Ostrava, CZE) (TV Analysis)

FINAL date 08-Sep-18

Henson (2021) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.84	9.52	13.28	17.04	20.96		24.96	29.16	33.48	37.96	42.32		47.37	3 / 1			
reaction time	0.219	interval		3.68	3.76	3.76	3.92		4.00	4.20	4.32	4.48	4.36	5.05			11.20	12.12	13.16
		velocity	7.71	9.51	9.31	9.31	8.93		8.75	8.33	8.10	7.81	8.03	7.92	8.44		9.38	8.66	7.98
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14	17.5	158.5				
Whyte, Annsert (JAM) (1987		time	5.76	9.36	13.04	16.84	20.80			29.08	33.48	38.16	42.96		48.46	1 / 2			
reaction time	0.168	interval		3.60	3.68	3.80	3.96			8.28	4.40	4.68	4.80	5.50			11.08	12.24	13.88
		velocity	7.81	9.72	9.51	9.21	8.84			8.45	7.95	7.48	7.29	7.27	8.25		9.48	8.58	7.56
H1 lead leg	L	strides		13	13	13	13			14	14	15	15	18.5	128.5				
Warholm, Karsten (NOR) (19		time	5.76	9.40	13.12	17.00	21.00		25.08	29.32	33.76	38.48	43.24		48.56	4 / 3			
reaction time	0.175	interval		3.64	3.72	3.88	4.00		4.08	4.24	4.44	4.72	4.76	5.32			11.24	12.32	13.92
		velocity	7.81	9.62	9.41	9.02	8.75		8.58	8.25	7.88	7.42	7.35	7.52	8.24		9.34	8.52	7.54
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Copello, Yasmani (TUR) (19		time	5.76	9.52	13.28	17.20	21.24		25.32	29.56	34.00	38.68	43.32		48.65	8 / 4			

reaction time	0.184	interval		3.76	3.76	3.92	4.04	4.08	4.24	4.44	4.68	4.64	5.33			11.44	12.36	13.76
		velocity	7.81	9.31	9.31	8.93	8.66	8.58	8.25	7.88	7.48	7.54	7.50	8.22		9.18	8.50	7.63
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	17.5	143.5				
Lahoulou, Abdelmalik (ALG)		time	6.04	9.76	13.44	17.24	21.16	25.32	29.68	34.24	38.96	43.76		49.12	6 / 5			
reaction time	0.179	interval		3.72	3.68	3.80	3.92	4.16	4.36	4.56	4.72	4.80	5.36			11.20	12.44	14.08
		velocity	7.45	9.41	9.51	9.21	8.93	8.41	8.03	7.68	7.42	7.29	7.46	8.14		9.38	8.44	7.46
H1 lead leg	L	strides	23	13	13	13	13		14	15	15	15	17.2	151.2				
Abe, Takatoshi (JPN) (1991)		time	5.92	9.60	13.40	17.32	21.36	25.52	29.96	34.52	39.32	44.16		49.80	7 / 6			
reaction time	0.192	interval		3.68	3.80	3.92	4.04	4.16	4.44	4.56	4.80	4.84	5.64			11.40	12.64	14.20
		velocity	7.60	9.51	9.21	8.93	8.66	8.41	7.88	7.68	7.29	7.23	7.09	8.03		9.21	8.31	7.39
H1 lead leg	R	strides	20	13	13	13	13		14	14	15	15	17.5	147.5				
Fredericks, Cornel (RSA) (19		time	5.96	9.84	13.64	17.52	21.60	25.80	30.24	34.84	39.64	44.60		50.54	2 / 7			
reaction time	0.139	interval		3.88	3.80	3.88	4.08	4.20	4.44	4.60	4.80	4.96	5.94			11.56	12.72	14.36
		velocity	7.55	9.02	9.21	9.02	8.58	8.33	7.88	7.61	7.29	7.06	6.73	7.91		9.08	8.25	7.31
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	19.2	157.2				
McMaster, Kyron (IVB) (1997		time	5.80	9.52	13.28	17.20	21.28	25.44	29.76	34.56	40.00			52.62	5 / 8			
reaction time	0.166	interval		3.72	3.76	3.92	4.08	4.16	4.32	4.80	5.44					11.40	12.56	
		velocity	7.76	9.41	9.31	8.93	8.58	8.41	8.10	7.29	6.43			7.60		9.21	8.36	
H1 lead leg	R	strides	20	13	12	13	13	13	13	14	15	15		141				

2018 Weltklasse (Zürich, SUI) (TV Analysis)

FINAL date 30-Aug-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997		time	5.80	9.50	13.30		21.16	22.9	25.24	29.44	33.84	38.32	42.88		48.08	3 / 1			
reaction time	0.178	interval		3.70	3.80		7.86		4.08	4.20	4.40	4.48	4.56	5.20					13.44
		velocity	7.76	9.46	9.21		8.91	8.73	8.58	8.33	7.95	7.81	7.68	7.69	8.32				7.81
H1 lead leg	L	strides	20	13	13				13	13	14	14	14	17	131				
Warholm, Karsten (NOR) (19		time	5.64	9.28	13.00	16.84	20.84	22.6	24.92	29.16	33.52	38.12	42.80		48.10	5 / 2			
reaction time	0.135	interval		3.64	3.72	3.84	4.00		4.08	4.24	4.36	4.60	4.68	5.30			11.20	12.32	13.64
		velocity	7.98	9.62	9.41	9.11	8.75	8.85	8.58	8.25	8.03	7.61	7.48	7.55	8.32		9.38	8.52	7.70
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Copello, Yasmani (TUR) (198		time	5.72	9.44	13.20		21.04	22.9	25.16	29.40	33.80	38.48	43.16		48.73	4 / 3			
reaction time	0.158	interval		3.72	3.76		7.84		4.12	4.24	4.40	4.68	4.68	5.57					13.76
		velocity	7.87	9.41	9.31		8.93	8.73	8.50	8.25	7.95	7.48	7.48	7.18	8.21				7.63
H1 lead leg	R	strides	20	13	13				13	13	13		14	18	117				
Mägi, Rasmus (EST) (1992)		time	5.92	9.68	13.44	17.36	21.40	23.3	25.56	30.04		39.20	43.88		49.28	7 / 4			
reaction time	0.176	interval		3.76	3.76	3.92	4.04		4.16	4.48		9.16	4.68	5.40			11.44	12.68	13.84
		velocity	7.60	9.31	9.31	8.93	8.66	8.58	8.41	7.81		7.64	7.48	7.41	8.12		9.18	8.28	7.59
H1 lead leg	L	strides	21	13	13	13	13		13	14	14		14		128				
Fredericks, Cornel (RSA) (19		time	5.92	9.68	13.48	17.44	21.52	23.4	25.76	30.24		39.44			49.96	8 / 5			
reaction time	0.144	interval		3.76	3.80	3.96	4.08		4.24	4.48		9.20					11.52	12.80	
		velocity	7.60	9.31	9.21	8.84	8.58	8.55	8.25	7.81		7.61			8.01		9.11	8.20	
H1 lead leg	R	strides	21	14	14		14		14	15	15				107				
Bencosme, José Reynaldo (I		time	6.04	9.88	13.76		21.96	23.8	26.12	30.48		39.52	44.32		50.01	1 / 6			
reaction time	0.151	interval		3.84	3.88		8.20		4.16	4.36		9.04	4.80	5.69					13.84
		velocity	7.45	9.11	9.02		8.54	8.40	8.41	8.03		7.74	7.29	7.03	8.00				7.59
H1 lead leg	L	strides	20	13	13				13	14			15		88				
Jackson, Bershawn (USA) (1		time	5.76	9.68	13.80	18.00	22.32	24.2	26.56	30.84		39.80	44.72		50.63	2 / 7			
reaction time	0.140	interval		3.92	4.12	4.20	4.32		4.24	4.28		8.96	4.92	5.91			12.24	12.84	13.88
		velocity	7.81	8.93	8.50	8.33	8.10	8.26	8.25	8.18		7.81	7.11	6.77	7.90		8.58	8.18	7.56
H1 lead leg	L	strides	22	15	15		15		15	15			16		113				
Holmes, TJ (USA) (1995)		time	5.76	9.32	13.08	16.96	21.00	22.8	25.16	29.44	34.00	39.04	44.48		51.39	6 / 8			
reaction time	0.186	interval		3.56	3.76	3.88	4.04		4.16	4.28	4.56	5.04	5.44	6.91			11.20	12.48	15.04
		velocity	7.81	9.83	9.31	9.02	8.66	8.77	8.41	8.18	7.68	6.94	6.43	5.79	7.78		9.38	8.41	6.98
H1 lead leg	L	strides	20	13	13	13	13		13	13	14		16		128				

2018 Japanese National High School Championships (Nagoya, JPN)

FINAL date 04-Aug-18

Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Deguchi, Haruto (JPN) (2001		time	6.26	10.36	14.66	19.04	23.52		27.98	32.47	36.95	41.45	46.01		51.17	4 / 1			
reaction time		interval		4.10	4.30	4.38	4.48		4.46	4.49	4.48	4.50	4.56	5.16	PB		12.78	13.43	13.54
		velocity	7.19	8.54	8.14	7.99	7.81		7.85	7.80	7.81	7.78	7.68	7.75	7.82		8.22	7.82	7.75
H1 lead leg		strides		15	15	15	15		15	15	15	15	15		135				
Iwabuchi, Soya (JPN)		time	6.34	10.51	14.86	19.18	23.53		28.04	32.50	36.97	41.47	46.08		51.37	5 / 2			
reaction time		interval		4.17	4.35	4.32	4.35		4.51	4.46	4.47	4.50	4.61	5.29	PB		12.84	13.32	13.58
		velocity	7.10	8.39	8.05	8.10	8.05		7.76	7.85	7.83	7.78	7.59	7.56	7.79		8.18	7.88	7.73
H1 lead leg		strides		15	15	15	15		15	15	15	15	15		135				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Motima, Satoshi (JPN)		time	6.21	10.24	14.40	18.57	22.92	27.43	31.93	36.54	41.21	46.15		51.66	8 / 3		
	reaction time	interval		4.03	4.16	4.17	4.35	4.51	4.50	4.61	4.67	4.94	5.51	PB		12.36	13.36	14.22
		velocity	7.25	8.68	8.41	8.39	8.05	7.76	7.78	7.59	7.49	7.09	7.26	7.74		8.50	7.86	7.38
	H1 lead leg	strides		15	15	15	15	15	15	15	15	16		136				
Hamada, Hiroshi (JPN) (2001		time	6.41	10.56	14.81	19.10	23.46	27.79	32.25	36.82	41.61	46.50		51.98	9 / 4		
	reaction time	interval		4.15	4.25	4.29	4.36	4.33	4.46	4.57	4.79	4.89	5.48	PB		12.69	13.15	14.25
		velocity	7.02	8.43	8.24	8.16	8.03	8.08	7.85	7.66	7.31	7.16	7.30	7.70		8.27	7.98	7.37
	H1 lead leg	strides		15	15	15	15	15	15	15	15	15		135				
Kono, Shoma (JPN) (2000)		time	6.39	10.58	14.98	19.37	23.81	28.28	32.83	37.42	42.09	46.88		52.12	3 / 5		
	reaction time	interval		4.19	4.40	4.39	4.44	4.47	4.55	4.59	4.67	4.79	5.24			12.98	13.46	14.05
		velocity	7.04	8.35	7.95	7.97	7.88	7.83	7.69	7.63	7.49	7.31	7.63	7.67		8.09	7.80	7.47
	H1 lead leg	strides		15	15	15	15	15	15	15	15	15		135				
Goto, Sota (JPN)		time	6.22	10.24	14.46	18.77	23.21	27.71	32.30	36.94	41.89	46.88		52.56	6 / 6		
	reaction time	interval		4.02	4.22	4.31	4.44	4.50	4.59	4.64	4.95	4.99	5.68			12.55	13.53	14.58
		velocity	7.23	8.71	8.29	8.12	7.88	7.78	7.63	7.54	7.07	7.01	7.04	7.61		8.37	7.76	7.20
	H1 lead leg	strides		15	15	15	15	15	15	15	16	16		137				
Odate, Yuya (JPN) (2000)		time	6.46	10.56	14.81	19.12	23.57	28.16	32.87	37.69	42.78	47.88		53.37	2 / 7		
	reaction time	interval		4.10	4.25	4.31	4.45	4.59	4.71	4.82	5.09	5.10	5.49			12.66	13.75	15.01
		velocity	6.97	8.54	8.24	8.12	7.87	7.63	7.43	7.26	6.88	6.86	7.29	7.49		8.29	7.64	7.00
	H1 lead leg	strides		15	15	15	15	15	15	15	16	16		137				
Kageyama, Ayata (JPN) (200		time	6.49	10.73	15.28	19.92	24.61	29.31	34.00	38.61	43.36	48.25		53.79	7 / 8		
	reaction time	interval		4.24	4.55	4.64	4.69	4.70	4.69	4.61	4.75	4.89	5.54			13.43	14.08	14.25
		velocity	6.93	8.25	7.69	7.54	7.46	7.45	7.46	7.59	7.37	7.16	7.22	7.44		7.82	7.46	7.37
	H1 lead leg	strides		15	15	15	15	15	15	15	15	15		135				

2018 Müller Anniversary Games (London, GBR) (TV Analysis)

FINAL date 21-Jul-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.72	9.36	13.12	17.00	20.92		24.92	29.04	33.28	37.68	42.32		47.65	7 / 1			
	reaction time 0.149	interval		3.64	3.76	3.88	3.92		4.00	4.12	4.24	4.40	4.64	5.33	NR PB		11.28	12.04	13.28
		velocity	7.87	9.62	9.31	9.02	8.93		8.75	8.50	8.25	7.95	7.54	7.50	8.39		9.31	8.72	7.91
	H1 lead leg L	strides	20	13	13	13	13		13	13	13	13	15	17.5	156.5				
Copello, Yasmani (TUR) (198		time	5.88	9.60			21.28		25.36	29.56	33.96	38.48	43.12		48.44	5 / 2			
	reaction time 0.151	interval		3.72			11.68		4.08	4.20	4.40	4.52	4.64	5.32					13.56
		velocity	7.65	9.41			8.99		8.58	8.33	7.95	7.74	7.54	7.52	8.26				7.74
	H1 lead leg R	strides	20	13					13	13	14	14	14	17.5	118.5				
Barr, Thomas (IRL) (1994)		time	6.04	9.84	13.76	17.76	21.80		25.96	30.40	34.80	39.28	43.80		48.99	8 / 3			
	reaction time 0.186	interval		3.80	3.92	4.00	4.04		4.16	4.44	4.40	4.48	4.52	5.19			11.72	12.64	13.40
		velocity	7.45	9.21	8.93	8.75	8.66		8.41	7.88	7.95	7.81	7.74	7.71	8.16		8.96	8.31	7.84
	H1 lead leg L	strides	21	13	13	13	13		13	14	14	14	14	18	160				
Kendziera, Dave (USA) (1994		time	5.80	9.64			21.60		25.72	30.04	34.52	39.04	43.64		49.02	3 / 4			
	reaction time 0.167	interval		3.84			11.96		4.12	4.32	4.48	4.52	4.60	5.38					13.60
		velocity	7.76	9.11			8.78		8.50	8.10	7.81	7.74	7.61	7.43	8.16				7.72
	H1 lead leg R	strides	20	13					13	13	14	14	15	18	120				
Mägi, Rasmus (EST) (1992)		time	5.96	9.84	13.68	17.60	21.56		25.76	30.16	34.56	39.16	43.76		49.11	9 / 5			
	reaction time 0.158	interval		3.88	3.84	3.92	3.96		4.20	4.40	4.40	4.60	4.60	5.35			11.64	12.56	13.60
		velocity	7.55	9.02	9.11	8.93	8.84		8.33	7.95	7.95	7.61	7.61	7.48	8.14		9.02	8.36	7.72
	H1 lead leg L	strides	21	13	13	13	13		13	14	14	14	14	17.2	159.2				
Clement, Kerron (USA) (198		time	5.88	9.68			21.40		25.60	29.96	34.56	39.24	44.00		49.43	6 / 6			
	reaction time 0.205	interval		3.80			11.72		4.20	4.36	4.60	4.68	4.76	5.43					14.04
		velocity	7.65	9.21			8.96		8.33	8.03	7.61	7.48	7.35	7.37	8.09				7.48
	H1 lead leg R	strides	20	13					13	13	14	14	14	16.5	117.5				
Holmes, TJ (USA) (1995)		time	5.92	9.64			21.24		25.40	29.76	34.40	39.12	44.00		49.66	4 / 7			
	reaction time 0.211	interval		3.72			11.60		4.16	4.36	4.64	4.72	4.88	5.66					14.24
		velocity	7.60	9.41			9.05		8.41	8.03	7.54	7.42	7.17	7.07	8.05				7.37
	H1 lead leg L	strides	20	13					13	13	14	14	15		102				
Rodger, Sebastian (GBR) (1		time	6.08	10.00		18.16	22.36		26.56	31.00	35.56	40.20	45.08		50.84	1 / 8			
	reaction time 0.161	interval		3.92		8.16	4.20		4.20	4.44	4.56	4.64	4.88	5.76			12.08	12.84	14.08
		velocity	7.40	8.93		8.58	8.33		8.33	7.88	7.68	7.54	7.17	6.94	7.87		8.69	8.18	7.46
	H1 lead leg R	strides	22	14			14		14	14	15	15	15		123				
Green, Jack (GBR) (1991)		time	6.08	9.96											dnf	2 / --			
	reaction time 0.180	interval		3.88															
		velocity	7.40	9.02															
	H1 lead leg R	strides	22	14											36				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

2018 Athletissima (Lausanne, SUI) (TV Analysis)

FINAL date 05-Jul-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.76	9.40	13.12	16.84	20.72		24.80	28.92	33.24	37.72	42.24		47.42	5 / 1			
reaction time	0.183	interval		3.64	3.72	3.72	3.88		4.08	4.12	4.32	4.48	4.52	5.18			11.08	12.08	13.32
		velocity	7.81	9.62	9.41	9.41	9.02		8.58	8.50	8.10	7.81	7.74	7.72	8.44		9.48	8.69	7.88
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	14	17.2	157.2				
Warholm, Karsten (NOR) (19		time	5.72	9.32	13.00	16.84	20.76		24.84	29.04	33.32	37.88	42.52		47.94	6 / 2			
reaction time	0.133	interval		3.60	3.68	3.84	3.92		4.08	4.20	4.28	4.56	4.64	5.42			11.12	12.20	13.48
		velocity	7.87	9.72	9.51	9.11	8.93		8.58	8.33	8.18	7.68	7.54	7.38	8.34		9.44	8.61	7.79
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Copello, Yasmani (TUR) (198		time	5.80	9.56	13.36		21.12		25.20	29.54	33.92	38.52	43.20		48.85	3 / 3			
reaction time	0.183	interval		3.76	3.80		7.76		4.08	4.34	4.38	4.60	4.68	5.65					13.66
		velocity	7.76	9.31	9.21		9.02		8.58	8.06	7.99	7.61	7.48	7.08	8.19				7.69
H1 lead leg	R	strides	20	13	13				13	14	14	14	14	18	133				
Holmes, TJ (USA) (1995)		time	5.84	9.56	13.28	17.12	21.16		25.40	29.76	34.20	38.92	43.64		48.94	7 / 4			
reaction time	0.188	interval		3.72	3.72	3.84	4.04		4.24	4.36	4.44	4.72	4.72	5.30			11.28	12.64	13.88
		velocity	7.71	9.41	9.41	9.11	8.66		8.25	8.03	7.88	7.42	7.42	7.55	8.17		9.31	8.31	7.56
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17	156				
Mägi, Rasmus (EST) (1992)		time	6.00	9.80	13.72		21.64		25.72	30.16	34.56	39.12	43.72		49.04	2 / 5			
reaction time	0.159	interval		3.80	3.92		7.92		4.08	4.44	4.40	4.56	4.60	5.32					13.56
		velocity	7.50	9.21	8.93		8.84		8.58	7.88	7.95	7.68	7.61	7.52	8.16				7.74
H1 lead leg	L	strides	21	13	13				13	14		14	14	17	119				
Jackson, Bershawn (USA) (1		time	5.60	9.44	13.44	17.52	21.64		25.72	29.84	34.12	38.60	43.40		49.31	8 / 6			
reaction time	0.129	interval		3.84	4.00	4.08	4.12		4.08	4.12	4.28	4.48	4.80	5.91			11.92	12.32	13.56
		velocity	8.04	9.11	8.75	8.58	8.50		8.58	8.50	8.18	7.81	7.29	6.77	8.11		8.81	8.52	7.74
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15		157				
Green, Jack (GBR) (1991)		time	6.00	9.80	13.76		21.80		25.96	30.32		39.44	44.12		49.52	1 / 7			
reaction time	0.172	interval		3.80	3.96		8.04		4.16	4.36		9.12	4.68	5.40					13.80
		velocity	7.50	9.21	8.84		8.71		8.41	8.03		7.68	7.48	7.41	8.08				7.61
H1 lead leg	R	strides	22	14	14		14		14	14		15	15	18.2	140.2				
McMaster, Kyron (IVB) (1997		time	5.60	9.16	12.76	16.48									dnf	4 / --			
reaction time	0.162	interval		3.56	3.60	3.72											10.88		
		velocity	8.04	9.83	9.72	9.41											9.65		
H1 lead leg	L	strides	21	13	13	13									60				

2018 Meeting de Paris (Paris, FRA) (TV Analysis)

FINAL date 30-Jun-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.88	9.48	13.12	16.84	20.60	22.3	24.52	28.68	32.88	37.36	41.84		46.98	5 / 1			
reaction time	0.209	interval		3.60	3.64	3.72	3.76		3.92	4.16	4.20	4.48	4.48	5.14	**AR PB**		10.96	11.84	13.16
		velocity	7.65	9.72	9.62	9.41	9.31	8.97	8.93	8.41	8.33	7.81	7.81	7.78	8.51		9.58	8.87	7.98
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14	17.2	158.2				
McMaster, Kyron (IVB) (1997		time	5.64	9.24	12.88	16.64	20.48	22.2	24.48	28.64	32.96	37.44	42.04		47.54	6 / 2			
reaction time	0.183	interval		3.60	3.64	3.76	3.84		4.00	4.16	4.32	4.48	4.60	5.50	**NR PB**		11.00	12.00	13.40
		velocity	7.98	9.72	9.62	9.31	9.11	9.01	8.75	8.41	8.10	7.81	7.61	7.27	8.41		9.55	8.75	7.84
H1 lead leg	R	strides	20	12	13	13	13		13	13	14	14	14	17	156				
Warholm, Karsten (NOR) (19		time	5.72	9.32	13.04	16.84	20.72	22.5	24.76	28.84	33.08	37.44	42.44		48.06	7 / 3			
reaction time	0.158	interval		3.60	3.72	3.80	3.88		4.04	4.08	4.24	4.36	5.00	5.62			11.12	12.00	13.60
		velocity	7.87	9.72	9.41	9.21	9.02	8.89	8.66	8.58	8.25	8.03	7.00	7.12	8.32		9.44	8.75	7.72
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	15	17.7	156.7				
Holmes, TJ (USA) (1995)		time	5.96	9.60	13.32	17.12	21.04	22.8	25.16	29.48	33.92	38.56	43.12		48.30	4 / 4			
reaction time	0.230	interval		3.64	3.72	3.80	3.92		4.12	4.32	4.44	4.64	4.56	5.18	**PB**		11.16	12.36	13.64
		velocity	7.55	9.62	9.41	9.21	8.93	8.77	8.50	8.10	7.88	7.54	7.68	7.72	8.28		9.41	8.50	7.70
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	17	158				
Clement, Kerron (USA) (198		time	5.92	9.64	13.32	17.16	21.16	22.9	25.44	29.80	34.28	38.80	43.48		48.83	8 / 5			
reaction time	0.233	interval		3.72	3.68	3.84	4.00		4.28	4.36	4.48	4.52	4.68	5.35			11.24	12.64	13.68
		velocity	7.60	9.41	9.51	9.11	8.75	8.73	8.18	8.03	7.81	7.74	7.48	7.48	8.19		9.34	8.31	7.68
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Jackson, Bershawn (USA) (1		time	5.68	9.44	13.40	17.44	21.56	23.4	25.64	29.76	34.04	38.52	43.32		49.16	2 / 6			
reaction time	0.140	interval		3.76	3.96	4.04	4.12		4.08	4.12	4.28	4.48	4.80	5.84			11.76	12.32	13.56
		velocity	7.92	9.31	8.84	8.66	8.50	8.55	8.58	8.50	8.18	7.81	7.29	6.85	8.14		8.93	8.52	7.74
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Coroller, Victor (FRA) (1997)		time	5.96	9.72	13.64	17.64	21.72	23.5	25.92	30.36	35.04	39.76	44.56		50.03	3 / 7			
reaction time	0.165	interval		3.76	3.92	4.00	4.08		4.20	4.44	4.68	4.72	4.80	5.47			11.68	12.72	14.20
		velocity	7.55	9.31	8.93	8.75	8.58	8.51	8.33	7.88	7.48	7.42	7.29	7.31	8.00		8.99	8.25	7.39

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	R	strides	21	14	14	14	14		14	14	15	15	15	18.5	168.5				
Santos, Juander (DOM) (199		time	5.92	9.72	13.60	17.64	21.72	23.5	25.92	30.36	34.96	39.84	44.80		50.71	1 / 8			
reaction time	0.168	interval		3.80	3.88	4.04	4.08		4.20	4.44	4.60	4.88	4.96	5.91			11.72	12.72	14.44
		velocity	7.60	9.21	9.02	8.66	8.58	8.51	8.33	7.88	7.61	7.17	7.06	6.77	7.89		8.96	8.25	7.27
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	16	16	19	173				

2018 Japanese National Championships (Yamaguchi, JPN)

FINAL date 23-Jun-18

Morioka (2018) - race pattern analysis of Japan's top 400m hurdles - main national competitions in 2018

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (		time	5.82	9.52	13.36	17.30	21.44		25.71	30.05	34.57	39.14	43.86		49.30	4 / 1			
reaction time	0.148	interval		3.70	3.84	3.94	4.14		4.27	4.34	4.52	4.57	4.72	5.44			11.48	12.75	13.81
		velocity	7.73	9.46	9.11	8.88	8.45		8.20	8.06	7.74	7.66	7.42	7.35	8.11		9.15	8.24	7.60
H1 lead leg	R		21	13	13	13	13		14	14	15	15	15	18.5	164.5				
Abe, Takatoshi (JPN) (1991)		time	5.98	9.65	13.39	17.24	21.21		25.33	29.80	34.40	39.10	43.87		49.44	7 / 2			
reaction time	0.201	interval		3.67	3.74	3.85	3.97		4.12	4.47	4.60	4.70	4.77	5.57			11.26	12.56	14.07
		velocity	7.53	9.54	9.36	9.09	8.82		8.50	7.83	7.61	7.45	7.34	7.18	8.09		9.33	8.36	7.46
H1 lead leg	R		20	13	13	13	13		13	14	14	15	15	18	161				
Maeno, Kei (JPN) (1991)		time	6.02	9.82	13.74	17.76	21.98		26.22	30.62	35.17	39.76	44.45		49.86	5 / 3			
reaction time	0.215	interval		3.80	3.92	4.02	4.22		4.24	4.40	4.55	4.59	4.69	5.41			11.74	12.86	13.83
		velocity	7.48	9.21	8.93	8.71	8.29		8.25	7.95	7.69	7.63	7.46	7.39	8.02		8.94	8.16	7.59
H1 lead leg	R		21	13	13	13	14		14	15	15	15	15	18.2	166.2				

2018 Bauhaus Athletics (Stockholm, SWE) (TV Analysis)

FINAL date 10-Jun-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.88	9.60	13.40	17.24	21.20		25.28	29.40	33.76	37.96	42.28		47.41	5 / 1			
reaction time	0.194	interval		3.72	3.80	3.84	3.96		4.08	4.12	4.36	4.20	4.32	5.13	AR PB		11.36	12.16	12.88
		velocity	7.65	9.41	9.21	9.11	8.84		8.58	8.50	8.03	8.33	8.10	7.80	8.44		9.24	8.63	8.15
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	14	17.5	158.5				
Warholm, Karsten (NOR) (19		time	5.68	9.36	13.20	17.08	21.12		25.20	29.36	33.68	38.00	42.44		47.81	7 / 2			
reaction time	0.134	interval		3.68	3.84	3.88	4.04		4.08	4.16	4.32	4.32	4.44	5.37	NR PB		11.40	12.28	13.08
		velocity	7.92	9.51	9.11	9.02	8.66		8.58	8.41	8.10	8.10	7.88	7.45	8.37		9.21	8.55	8.03
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18	159				
Copello, Yasmani (TUR) (198		time	5.80	9.60	13.48	17.44	21.52		25.68	30.00	34.40	38.92	43.48		48.91	6 / 3			
reaction time	0.202	interval		3.80	3.88	3.96	4.08		4.16	4.32	4.40	4.52	4.56	5.43			11.64	12.56	13.48
		velocity	7.76	9.21	9.02	8.84	8.58		8.41	8.10	7.95	7.74	7.68	7.37	8.18		9.02	8.36	7.79
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17.5	158.5				
Hann, Mamadou Kasse (FRA		time	6.00	9.80	13.68	17.52	21.48		25.68	30.04	34.56	39.24	44.04		49.58	3 / 4			
reaction time	0.140	interval		3.80	3.88	3.84	3.96		4.20	4.36	4.52	4.68	4.80	5.54			11.52	12.52	14.00
		velocity	7.50	9.21	9.02	9.11	8.84		8.33	8.03	7.74	7.48	7.29	7.22	8.07		9.11	8.39	7.50
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	17.7	163.7				
Green, Jack (GBR) (1991)		time	6.04	9.84	13.72	17.68	21.80		26.12	30.56	35.04	39.60	44.40		49.73	8 / 5			
reaction time	0.176	interval		3.80	3.88	3.96	4.12		4.32	4.44	4.48	4.56	4.80	5.33			11.64	12.88	13.84
		velocity	7.45	9.21	9.02	8.84	8.50		8.10	7.88	7.81	7.68	7.29	7.50	8.04		9.02	8.15	7.59
H1 lead leg	R	strides	22	14	14	13	14		15	15	15	15	16		153				
Rodger, Sebastian (GBR) (1		time	6.12	10.00	14.12	18.24	22.40		26.64	30.84	35.12	39.60	44.24		49.87	1 / 6			
reaction time	0.163	interval		3.88	4.12	4.12	4.16		4.24	4.20	4.28	4.48	4.64	5.63			12.12	12.60	13.40
		velocity	7.35	9.02	8.50	8.50	8.41		8.25	8.33	8.18	7.81	7.54	7.10	8.02		8.66	8.33	7.84
H1 lead leg	R	strides	22	14	14	14	14		14	14	15	15	15	19	170				
Mägi, Rasmus (EST) (1992)		time	6.00	9.88	13.88	17.84	21.96		26.20	30.64	35.20	39.88	44.56		50.11	4 / 7			
reaction time	0.135	interval		3.88	4.00	3.96	4.12		4.24	4.44	4.56	4.68	4.68	5.55			11.84	12.80	13.92
		velocity	7.50	9.02	8.75	8.84	8.50		8.25	7.88	7.68	7.48	7.48	7.21	7.98		8.87	8.20	7.54
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	14	14	17.2	160.2				

2018 NCAA Championships (Eugene, OR) (TV Analysis)

FINAL date 08-Jun-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Benjamin, Rai (ANT) (1997)		time	5.83	9.56	13.33	17.06	21.00		25.00	29.03	33.23	37.46	41.90		47.02	5 / 1			
reaction time		interval		3.73	3.77	3.73	3.94		4.00	4.03	4.20	4.23	4.44	5.12	AR PB		11.23	11.97	12.87
		velocity	7.72	9.38	9.28	9.38	8.88		8.75	8.68	8.33	8.27	7.88	7.81	8.51		9.35	8.77	8.16
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16.2	153.2				
Selmon, Kenny (USA) (1996)		time	5.96		13.53	17.30	21.13		25.16		33.60	38.13	42.80		48.12	4 / 2			
reaction time		interval			7.57	3.77	3.83		4.03		8.44	4.53	4.67	5.32	PB		11.34		
		velocity	7.55		9.25	9.28	9.14		8.68		8.29	7.73	7.49	7.52	8.31		9.26		
H1 lead leg	R	strides				13	13		13			14	15	17.5	85.5				
Kendziera, Dave (USA) (1994		time	5.86		13.43	17.20	21.03		25.06			38.43	43.03		48.42	3 / 3			
reaction time		interval			7.57	3.77	3.83		4.03			13.37	4.60	5.39	PB		11.34		
		velocity	7.68		9.25	9.28	9.14		8.68			7.85	7.61	7.42	8.26		9.26		

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	R	strides				13	13		13				15	19	73				
Mowatt, Kemar (JAM) (1995)		time	5.86	9.53	13.23	17.00	21.00		25.13	29.40	33.80	38.36	43.13		48.83	6 / 4			
reaction time		interval		3.67	3.70	3.77	4.00		4.13	4.27	4.40	4.56	4.77	5.70			11.14	12.40	13.73
		velocity	7.68	9.54	9.46	9.28	8.75		8.47	8.20	7.95	7.68	7.34	7.02	8.19		9.43	8.47	7.65
H1 lead leg	L	strides		13	13	13	13		13	14	14	15	15	18.5	141.5				

2018 Bislett Games (Oslo, NOR) (TV Analysis)

FINAL date 07-Jun-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.76	9.36	13.08	16.92	20.88	22.7	25.04	29.28	33.72	38.00	42.40		47.60	5 / 1			
reaction time	0.189	interval		3.60	3.72	3.84	3.96		4.16	4.24	4.44	4.28	4.40	5.20			11.16	12.36	13.12
		velocity	7.81	9.72	9.41	9.11	8.84	8.81	8.41	8.25	7.88	8.18	7.95	7.69	8.40		9.41	8.50	8.00
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	14	17.2	159.2				
Warholm, Karsten (NOR) (19		time	5.68	9.24	12.96	16.80	20.80	22.6	24.88	29.16	33.48	37.92	42.64		48.22	7 / 2			
reaction time	0.165	interval		3.56	3.72	3.84	4.00		4.08	4.28	4.32	4.44	4.72	5.58			11.12	12.36	13.48
		velocity	7.92	9.83	9.41	9.11	8.75	8.85	8.58	8.18	8.10	7.88	7.42	7.17	8.30		9.44	8.50	7.79
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	14	17.5	155.5				
Copello, Yasmani (TUR) (198		time	5.84	9.48			21.16	23.0	25.20	29.44	33.84	38.28	43.00		48.54	4 / 3			
reaction time	0.210	interval		3.64			11.68		4.04	4.24	4.40	4.44	4.72	5.54					13.56
		velocity	7.71	9.62			8.99	8.70	8.66	8.25	7.95	7.88	7.42	7.22	8.24				7.74
H1 lead leg	R	strides	20	13	13				13	13	14	14	14	18	132				
Holmes, TJ (USA) (1995)		time	5.76	9.36			20.84	22.6	24.96	29.36	33.84	38.56	43.24		48.64	3 / 4			
reaction time	0.210	interval		3.60			11.48		4.12	4.40	4.48	4.72	4.68	5.40					13.88
		velocity	7.81	9.72			9.15	8.85	8.50	7.95	7.81	7.42	7.48	7.41	8.22				7.56
H1 lead leg	L	strides	20	13	13				13	14	14	14	14	17	132				
Clement, Kerron (USA) (198		time	5.84	9.56	13.32	17.20	21.32	23.1	25.64	30.04	34.56	39.20	43.84		49.30	6 / 5			
reaction time	0.159	interval		3.72	3.76	3.88	4.12		4.32	4.40	4.52	4.64	4.64	5.46			11.36	12.84	13.80
		velocity	7.71	9.41	9.31	9.02	8.50	8.66	8.10	7.95	7.74	7.54	7.54	7.33	8.11		9.24	8.18	7.61
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Mägi, Rasmus (EST) (1992)		time	5.88	9.60	13.36	17.20	21.28	23.1	25.48	30.00	34.44	39.08	43.80		49.35	8 / 6			
reaction time	0.142	interval		3.72	3.76	3.84	4.08		4.20	4.52	4.44	4.64	4.72	5.55			11.32	12.80	13.80
		velocity	7.65	9.41	9.31	9.11	8.58	8.66	8.33	7.74	7.88	7.54	7.42	7.21	8.11		9.28	8.20	7.61
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14		142				
Hann, Mamadou Kasse (FRA		time	5.92	9.72			21.48	23.3	25.68	30.08	34.48	39.16	43.96		49.50	2 / 7			
reaction time	0.159	interval		3.80			11.76		4.20	4.40	4.40	4.68	4.80	5.54					13.88
		velocity	7.60	9.21			8.93	8.58	8.33	7.95	7.95	7.48	7.29	7.22	8.08				7.56
H1 lead leg	L	strides	21	13					14	14	14	14	15	17	122				
Barr, Thomas (IRL) (1994)		time	5.96	9.72			21.52	23.4	25.84	30.24	34.80	39.48	44.16		49.53	1 / 8			
reaction time	0.197	interval		3.76			11.80		4.32	4.40	4.56	4.68	4.68	5.37					13.92
		velocity	7.55	9.31			8.90	8.55	8.10	7.95	7.68	7.48	7.48	7.45	8.08				7.54
H1 lead leg	L	strides	21	13					14	14	14	14	15	18	123				

2018 Golden Gala Pietro Mennea (Rome, ITA) (TV Analysis)

FINAL date 31-May-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.76	9.44	13.20	17.04	20.92		25.04	29.24	33.56	37.96	42.36		47.48	4 / 1			
reaction time	0.158	interval		3.68	3.76	3.84	3.88		4.12	4.20	4.32	4.40	4.40	5.12	AR PB		11.28	12.20	13.12
		velocity	7.81	9.51	9.31	9.11	9.02		8.50	8.33	8.10	7.95	7.95	7.81	8.42		9.31	8.61	8.00
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Warholm, Karsten (NOR) (19		time	5.68	9.24	12.92	16.76	20.68		24.80	28.96	33.24	37.68	42.40		47.82	7 / 2			
reaction time	0.155	interval		3.56	3.68	3.84	3.92		4.12	4.16	4.28	4.44	4.72	5.42	NR PB		11.08	12.20	13.44
		velocity	7.92	9.83	9.51	9.11	8.93		8.50	8.41	8.18	7.88	7.42	7.38	8.36		9.48	8.61	7.81
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	14	17.5	155.5				
Copello, Yasmani (TUR) (198		time	5.84	9.56	13.32	17.16	21.12		25.20	29.40	33.84	38.36	43.12		48.63	5 / 3			
reaction time	0.205	interval		3.72	3.76	3.84	3.96		4.08	4.20	4.44	4.52	4.76	5.51			11.32	12.24	13.72
		velocity	7.71	9.41	9.31	9.11	8.84		8.58	8.33	7.88	7.74	7.35	7.26	8.23		9.28	8.58	7.65
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	14	18	158				
Holmes, TJ (USA) (1995)		time	5.96	9.72	13.60	17.56	21.60		25.88	30.20	34.68	39.40	43.92		49.00	3 / 4			
reaction time	0.194	interval		3.76	3.88	3.96	4.04		4.28	4.32	4.48	4.72	4.52	5.08			11.60	12.64	13.72
		velocity	7.55	9.31	9.02	8.84	8.66		8.18	8.10	7.81	7.42	7.74	7.87	8.16		9.05	8.31	7.65
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17	156				
Mägi, Rasmus (EST) (1992)		time	6.04	9.92	13.76	17.68	21.72		25.88	30.28	34.72	39.32	43.92		49.19	9 / 5			
reaction time	0.140	interval		3.88	3.84	3.92	4.04		4.16	4.40	4.44	4.60	4.60	5.27			11.64	12.60	13.64
		velocity	7.45	9.02	9.11	8.93	8.66		8.41	7.95	7.88	7.61	7.61	7.59	8.13		9.02	8.33	7.70
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17	159				
Clement, Kerron (USA) (198		time	5.88	9.64	13.44	17.40	21.44		25.68	30.04	34.52	39.08	43.96		49.48	6 / 6			

reaction time	0.159	interval		3.76	3.80	3.96	4.04	4.24	4.36	4.48	4.56	4.88	5.52			11.52	12.64	13.92
		velocity	7.65	9.31	9.21	8.84	8.66	8.25	8.03	7.81	7.68	7.17	7.25	8.08		9.11	8.31	7.54
H1 lead leg	R	strides	20	13	13	13	13	13	13	13	13	14	16.5	154.5				
Bencosme, José Reynaldo (I		time	6.04	9.80	13.64	17.52	21.48	25.60	30.00	34.48	39.28	44.12		49.79	2 / 7			
reaction time	0.153	interval		3.76	3.84	3.88	3.96	4.12	4.40	4.48	4.80	4.84	5.67			11.48	12.48	14.12
		velocity	7.45	9.31	9.11	9.02	8.84	8.50	7.95	7.81	7.29	7.23	7.05	8.03		9.15	8.41	7.44
H1 lead leg	L	strides	20	13	13	13	13	13	14	14	15	15		143				
Bett, Nicholas (KEN) (1990)		time	5.96	9.68	13.48	17.40	21.52	25.76	30.12	34.76	39.52	44.36		49.95	8 / 8			
reaction time	0.180	interval		3.72	3.80	3.92	4.12	4.24	4.36	4.64	4.76	4.84	5.59			11.44	12.72	14.24
		velocity	7.55	9.41	9.21	8.93	8.50	8.25	8.03	7.54	7.35	7.23	7.16	8.01		9.18	8.25	7.37
H1 lead leg	R	strides	22	13	13	13	13	13	13	15	15	15		145				
Lambrughi, Mario (ITA) (199		time	5.84	9.80	13.76	17.88								dnf	1 / --			
reaction time	0.135	interval		3.96	3.96	4.12										12.04		
		velocity	7.71	8.84	8.84	8.50										8.72		
H1 lead leg	R	strides	22	14	14	14								64				

2018 Shimane High School Championships (Honshu, JPN)

FINAL date 26-May-18

Shimizu (2018) - shimane high school championships 2018 - biomechanics data analysis

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
田中 曌	time	6.47	10.65	14.90	19.23	23.72		28.30	33.00	37.92	42.95	48.02		53.66	4 / 1			
reaction time	interval		4.18	4.25	4.33	4.49		4.58	4.70	4.92	5.03	5.07	5.64			12.76	13.77	15.02
	velocity	6.96	8.37	8.24	8.08	7.80		7.64	7.45	7.11	6.96	6.90	7.09	7.45		8.23	7.63	6.99
H1 lead leg	strides	22	15	15	15	15		15	15	17	17	17	19	182				
藤岡 哲也	time	6.53	10.88	15.32	19.72	24.27		28.90	33.73	38.82	44.03	49.30		55.32	3 / 2			
reaction time	interval		4.35	4.44	4.40	4.55		4.63	4.83	5.09	5.21	5.27	6.02			13.19	14.01	15.57
	velocity	6.89	8.05	7.88	7.95	7.69		7.56	7.25	6.88	6.72	6.64	6.64	7.23		7.96	7.49	6.74
H1 lead leg	strides	23	15	15	15	15		15	16	16	16	16	20	182				
今岡 紘希	time	6.57	10.98	15.42	19.90	24.57		29.37	34.40	39.62	44.92	50.13		55.97	6 / 3			
reaction time	interval		4.41	4.44	4.48	4.67		4.80	5.03	5.22	5.30	5.21	5.84			13.33	14.50	15.73
	velocity	6.85	7.94	7.88	7.81	7.49		7.29	6.96	6.70	6.60	6.72	6.85	7.15		7.88	7.24	6.68
H1 lead leg	strides	22	15	15	15	15		15	17	17	17	17	20	185				
松本 達樹	time	6.55	11.10	15.70	20.45	25.32		30.30	35.35	40.53	46.02	51.50		57.39	5 / 4			
reaction time	interval		4.55	4.60	4.75	4.87		4.98	5.05	5.18	5.49	5.48	5.89			13.90	14.90	16.15
	velocity	6.87	7.69	7.61	7.37	7.19		7.03	6.93	6.76	6.38	6.39	6.79	6.97		7.55	7.05	6.50
H1 lead leg	strides	24	18	17	17	17		17	17	17	19	19	22	204				

2018 Seiko Golden Grand Prix (Osaka, JPN)

FINAL date 20-May-18

Morioka (2018) - race pattern analysis of Japan's top 400m hurdles - main national competitions in 2018

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)	time	5.91	9.51	13.16	16.90	20.74		24.74	29.03	33.60	38.47	43.41		48.97	7 / 1			
reaction time	0.194	interval		3.60	3.65	3.74	3.84	4.00	4.29	4.57	4.87	4.94	5.56			10.99	12.13	14.38
		velocity	7.61	9.72	9.59	9.36	9.11	8.75	8.16	7.66	7.19	7.09	7.19	8.17		9.55	8.66	7.30
H1 lead leg	R	strides	20	13	13	13	13	13	13	14	16	15	18	161				
Kishimoto, Takayuki (JPN) (		time	5.85	9.54	13.33	17.22	21.24	25.44	29.91	34.51	39.13	43.88		49.36	5 / 2			
reaction time	0.140	interval		3.69	3.79	3.89	4.02	4.20	4.47	4.60	4.62	4.75	5.48			11.37	12.69	13.97
		velocity	7.69	9.49	9.23	9.00	8.71	8.33	7.83	7.61	7.58	7.37	7.30	8.10		9.23	8.27	7.52
H1 lead leg	R	strides	20	13	13	13	13	14	14	15	15	15	18.2	163.2				

2018 Doha Diamond League (Doha, QAT) (TV Analysis)

FINAL date 04-May-18

Henson (2020) - Athlete First: 2018 year end hurdle report

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT	time	5.80	9.44	13.16	16.96	20.92		24.96	29.16	33.48	37.88	42.36		47.57	4 / 1			
reaction time	0.192	interval		3.64	3.72	3.80	3.96	4.04	4.20	4.32	4.40	4.48	5.21	NR PB		11.16	12.20	13.20
		velocity	7.76	9.62	9.41	9.21	8.84	8.66	8.33	8.10	7.95	7.81	7.68	8.41		9.41	8.61	7.95
H1 lead leg	R	strides	20	13	13	13	13	13	13	13		14	17.5	142.5				
Jackson, Bershawn (USA) (1	time	5.72	9.56	13.64	17.84	22.04		26.20	30.32	34.56	39.00	43.60		49.08	2 / 2			
reaction time	0.176	interval		3.84	4.08	4.20	4.20	4.16	4.12	4.24	4.44	4.60	5.48			12.12	12.48	13.28
		velocity	7.87	9.11	8.58	8.33	8.33	8.41	8.50	8.25	7.88	7.61	7.30	8.15		8.66	8.41	7.91
H1 lead leg	L	strides	22	15	15	15	15	15	15	15		15	19	161				
McMaster, Kyron (IVB) (1997	time	5.92	9.68	13.52	17.44	21.48		25.64	30.00	34.52	39.12	43.84		49.46	5 / 3			
reaction time	0.215	interval		3.76	3.84	3.92	4.04	4.16	4.36	4.52	4.60	4.72	5.62			11.52	12.56	13.84
		velocity	7.60	9.31	9.11	8.93	8.66	8.41	8.03	7.74	7.61	7.42	7.12	8.09		9.11	8.36	7.59
H1 lead leg	L	strides	21	13	13	13	13	14	14	14		14	17	146				
Copello, Yasmani (TUR) (19	time	6.04	9.80	13.72	17.68	21.76		25.92	30.32	34.80	39.48	44.28		49.95	3 / 4			
reaction time	0.224	interval		3.76	3.92	3.96	4.08	4.16	4.40	4.48	4.68	4.80	5.67			11.64	12.64	13.96
		velocity	7.45	9.31	8.93	8.84	8.58	8.41	7.95	7.81	7.48	7.29	7.05	8.01		9.02	8.31	7.52
H1 lead leg	R	strides	20	13	13	13	13	13	14	14		14	18.2	145.2				
Fredericks, Cornel (RSA) (19	time	5.96	9.72	13.60	17.52	21.64		25.88	30.32	34.88	39.64	44.40		50.03	1 / 5			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.164	interval		3.76	3.88	3.92	4.12	4.24	4.44	4.56	4.76	4.76	5.63			11.56	12.80	14.08
		velocity	7.55	9.31	9.02	8.93	8.50	8.25	7.88	7.68	7.35	7.35	7.10	8.00		9.08	8.20	7.46
H1 lead leg	R	strides	22	14	14	14	14	14	15	15		15	19	156				
Clement, Kerron (USA) (198		time	6.16	10.00	13.88	17.88	22.08	26.40	30.76	35.24	39.96	44.76		50.19	6 / 6			
reaction time	0.276	interval		3.84	3.88	4.00	4.20	4.32	4.36	4.48	4.72	4.80	5.43			11.72	12.88	14.00
		velocity	7.31	9.11	9.02	8.75	8.33	8.10	8.03	7.81	7.42	7.29	7.37	7.97		8.96	8.15	7.50
H1 lead leg	R	strides	20	13	13	13	13	13	13	13	14	14		139				
Green, Jack (GBR) (1991)		time	6.12	10.00	13.92	18.04	22.32	26.64	31.12	35.56	40.20	44.96		50.22	8 / 7			
reaction time	0.230	interval		3.88	3.92	4.12	4.28	4.32	4.48	4.44	4.64	4.76	5.26			11.92	13.08	13.84
		velocity	7.35	9.02	8.93	8.50	8.18	8.10	7.81	7.88	7.54	7.35	7.60	7.96		8.81	8.03	7.59
H1 lead leg	R	strides	22	14	13	14	14	14	14	15	15	15		150				
Hussein, Kariem (SUI) (1989)		time	6.04	9.88	13.84	17.88	22.00	26.28	30.72	35.36	40.32			51.40	7 / 8			
reaction time	0.230	interval		3.84	3.96	4.04	4.12	4.28	4.44	4.64	4.96					11.84	12.84	
		velocity	7.45	9.11	8.84	8.66	8.50	8.18	7.88	7.54	7.06			7.78		8.87	8.18	
H1 lead leg	L	strides	20	13	13	13	13	13	13	14	14	15		141				

2018 Shizuoka International Athletics Meeting (Fukuroi, JPN)

A FINAL

date 03-May-18

Morioka (2018) - race pattern analysis of Japan's top 400m hurdles - main national competitions in 2018

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	5.97	9.64	13.38	17.15	20.99		24.96	29.20	33.67	38.27	43.06		48.68	6 / 1			
reaction time	0.222	interval		3.67	3.74	3.77	3.84		3.97	4.24	4.47	4.60	4.79	5.62	PB		11.18	12.05	13.86
		velocity	7.54	9.54	9.36	9.28	9.11		8.82	8.25	7.83	7.61	7.31	7.12	8.22		9.39	8.71	7.58
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	15	15	18	161				
Kishimoto, Takayuki (JPN) (		time	5.89	9.68	13.53	17.50	21.55		25.74	30.16	34.70	39.29	43.98		49.33	1 / 2			
reaction time	0.170	interval		3.79	3.85	3.97	4.05		4.19	4.42	4.54	4.59	4.69	5.35			11.61	12.66	13.82
		velocity	7.64	9.23	9.09	8.82	8.64		8.35	7.92	7.71	7.63	7.46	7.48	8.11		9.04	8.29	7.60
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.2	164.2				

B FINAL

date 03-May-18

Morioka (2018) - race pattern analysis of Japan's top 400m hurdles - main national competitions in 2018

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Obayashi, Masayuki (JPN) (1		time	6.01	9.75	13.93	18.07	22.26		26.48	30.77	35.21	39.76	44.48		49.93	6 / 1			
reaction time	0.168	interval		3.74	4.18	4.14	4.19		4.22	4.29	4.44	4.55	4.72	5.45	PB		12.06	12.70	13.71
		velocity	7.49	9.36	8.37	8.45	8.35		8.29	8.16	7.88	7.69	7.42	7.34	8.01		8.71	8.27	7.66
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	19.7	176.7				
Yamamoto, Tatsuhiro (JPN)		time	6.14	10.04	14.03	18.10	22.27		26.59	31.03	35.60	40.18	44.76		49.94	8 / 2			
reaction time	0.171	interval		3.90	3.99	4.07	4.17		4.32	4.44	4.57	4.58	4.58	5.18	PB		11.96	12.93	13.73
		velocity	7.33	8.97	8.77	8.60	8.39		8.10	7.88	7.66	7.64	7.64	7.72	8.01		8.78	8.12	7.65
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	18.2	171.2				

C FINAL

date 03-May-18

Morioka (2018) - race pattern analysis of Japan's top 400m hurdles - main national competitions in 2018

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Inoue, Kakeru (JPN) (1996)		time	6.14	9.99	13.86	17.76	21.75		25.94	30.26	34.78	39.45	44.19		49.54	5 / 1			
reaction time	0.182	interval		3.85	3.87	3.90	3.99		4.19	4.32	4.52	4.67	4.74	5.35	PB		11.62	12.50	13.93
		velocity	7.33	9.09	9.04	8.97	8.77		8.35	8.10	7.74	7.49	7.38	7.48	8.07		9.04	8.40	7.54
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	18.5	169.5				

2018 Commonwealth Games (Gold Coast, AUS) (TV Analysis)

FINAL

date 12-Apr-18

Henson (2020) - Athlete First: 2018 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997		time	5.94	9.67	13.41	17.28	21.25		25.36	29.56	33.93	38.44	43.04		48.25	5 / 1			
reaction time	0.156	interval		3.73	3.74	3.87	3.97		4.11	4.20	4.37	4.51	4.60	5.21			11.34	12.28	13.48
		velocity	7.58	9.38	9.36	9.04	8.82		8.52	8.33	8.01	7.76	7.61	7.68	8.29		9.26	8.55	7.79
H1 lead leg	L	strides	21	13	13	13	13		13	13	14	14	14	17	158				
Gibson, Jeffery (BAH) (1990)		time	6.00	9.84	13.68	17.58	21.55		25.69	30.06	34.53	39.17	43.77		49.10	8 / 2			
reaction time	0.146	interval		3.84	3.84	3.90	3.97		4.14	4.37	4.47	4.64	4.60	5.33			11.58	12.48	13.71
		velocity	7.50	9.11	9.11	8.97	8.82		8.45	8.01	7.83	7.54	7.61	7.50	8.15		9.07	8.41	7.66
H1 lead leg	R	strides		13	13	13	13		13	14	14	14	14	17.7	138.7				
Hyde, Jaheel (JAM) (1997)		time	5.80	9.54	13.24	17.08	21.15		25.22	29.49	34.03	38.67	43.47		49.16	3 / 3			
reaction time	0.157	interval		3.74	3.70	3.84	4.07		4.07	4.27	4.54	4.64	4.80	5.69			11.28	12.41	13.98
		velocity	7.76	9.36	9.46	9.11	8.60		8.60	8.20	7.71	7.54	7.29	7.03	8.14		9.31	8.46	7.51
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18.7	169.7				
Green, Jack (GBR) (1991)		time	6.17	9.97	13.74	17.65	21.75		25.99	30.30	34.70	39.24	43.77		49.18	7 / 4			
reaction time	0.185	interval		3.80	3.77	3.91	4.10		4.24	4.31	4.40	4.54	4.53	5.41			11.48	12.65	13.47
		velocity	7.29	9.21	9.28	8.95	8.54		8.25	8.12	7.95	7.71	7.73	7.39	8.13		9.15	8.30	7.80
H1 lead leg	R	strides	22	14	13	13	14		14	14	14	15	15	19.2	167.2				

2017 National Sport Festival (Matsuyama, JPN)

FINAL

date 07-Oct-17

Morioka (2018) - Analysis of the race patterns of the top 400m hurdles in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (		time	5.84	9.54	13.41	17.41	21.51		25.78	30.08	34.60	39.27	44.01		49.39	/ 1			

reaction time	0.149	interval		3.70	3.87	4.00	4.10	4.27	4.30	4.52	4.67	4.74	5.38			11.57	12.67	13.93
		velocity	7.71	9.46	9.04	8.75	8.54	8.20	8.14	7.74	7.49	7.38	7.43	8.10		9.08	8.29	7.54
H1 lead leg		strides		13	13	13	13	14	14	15	15	15		125				

2017 Chinese National Games (Tianjin, CHN)

FINAL date 04-Sep-17

Zhou (2020) - analysis of competetive performance charactersitics of outstanding men's 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Feng Zhiqiang (CHN) (1998)		time	5.7	9.6	13.5	17.3	21.6		26.0	30.3	34.8	39.5	44.1		49.66	/ 1			
reaction time		interval		3.90	3.90	3.80	4.30		4.40	4.30	4.50	4.70	4.60	5.56	**PB**		11.60	13.00	13.80
		velocity	7.89	8.97	8.97	9.21	8.14		7.95	8.14	7.78	7.45	7.61	7.19	8.05		9.05	8.08	7.61
H1 lead leg		strides	21	13	13	13	13		14	15	15	15	15	18	165				

2017 Weltklasse (Zürich, SUI) (TV Analysis)

FINAL date 24-Aug-17

Henson (2020) - Athlete First: 2017 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997		time	5.72	9.42	13.16		21.00		25.08	29.32	33.76	38.24	42.88		48.07	4 / 1			
reaction time	0.153	interval		3.70	3.74		7.84		4.08	4.24	4.44	4.48	4.64	5.19					13.56
		velocity	7.87	9.46	9.36		8.93		8.58	8.25	7.88	7.81	7.54	7.71	8.32				7.74
H1 lead leg	R	strides	20	13	13				13	13	14	14	14	17.2	131.2				
Warholm, Karsten (NOR) (19		time	5.76	9.32	13.00	16.80	20.76		24.84	29.08	33.52	38.28	43.00		48.22	6 / 2			
reaction time	0.164	interval		3.56	3.68	3.80	3.96		4.08	4.24	4.44	4.76	4.72	5.22	**NR PB**		11.04	12.28	13.92
		velocity	7.81	9.83	9.51	9.21	8.84		8.58	8.25	7.88	7.35	7.42	7.66	8.30		9.51	8.55	7.54
H1 lead leg	L	strides	20	13	13	13	13		13	13	15		15	17.7	145.7				
Hussein, Kariem (SUI) (1989)		time	6.00	9.72	13.56		21.56		25.68	29.84	34.20	38.60	43.12		48.45	3 / 3			
reaction time	0.148	interval		3.72	3.84		8.00		4.12	4.16	4.36	4.40	4.52	5.33	**=PB**				13.28
		velocity	7.50	9.41	9.11		8.75		8.50	8.41	8.03	7.95	7.74	7.50	8.26				7.91
H1 lead leg	L	strides	20	13	13				14	14	14	14	14	17.2	133.2				
Clement, Kerron (USA) (198		time	5.96	9.68	13.44	17.28	21.32		25.52	29.80	34.16	38.72	43.56		49.20	7 / 4			
reaction time	0.167	interval		3.72	3.76	3.84	4.04		4.20	4.28	4.36	4.56	4.84	5.64			11.32	12.52	13.76
		velocity	7.55	9.41	9.31	9.11	8.66		8.33	8.18	8.03	7.68	7.23	7.09	8.13		9.28	8.39	7.63
H1 lead leg	R	strides	20	13	13	13	13		13	13	13		15	17	143				
Copello, Yasmani (TUR) (198		time	5.84	9.56	13.36		21.28		25.48	29.88	34.40	39.08	43.80		49.23	5 / 5			
reaction time	0.181	interval		3.72	3.80		7.92		4.20	4.40	4.52	4.68	4.72	5.43					13.92
		velocity	7.71	9.41	9.21		8.84		8.33	7.95	7.74	7.48	7.42	7.37	8.13				7.54
H1 lead leg	R	strides	20	13	13				13	14	14		14	17.5	118.5				
Green, Jack (GBR) (1991)		time	6.00	9.72	13.48	17.40	21.52		25.84	30.24	34.76	39.44	44.12		49.41	8 / 6			
reaction time	0.218	interval		3.72	3.76	3.92	4.12		4.32	4.40	4.52	4.68	4.68	5.29			11.40	12.84	13.88
		velocity	7.50	9.41	9.31	8.93	8.50		8.10	7.95	7.74	7.48	7.48	7.56	8.10		9.21	8.18	7.56
H1 lead leg	L	strides	21	13	13	13	14		14	15	15		15	18.5	151.5				
van Zyl, LJ (RSA) (1985)		time	5.96	9.68	13.56		21.60		25.80	30.12	34.60	39.20	44.24		49.92	1 / 7			
reaction time	0.188	interval		3.72	3.88		8.04		4.20	4.32	4.48	4.60	5.04	5.68					14.12
		velocity	7.55	9.41	9.02		8.71		8.33	8.10	7.81	7.61	6.94	7.04	8.01				7.44
H1 lead leg	L	strides	22	14	14				14	15	15		16	19	129				
Jackson, Bershawn (USA) (1		time	5.60	9.36	13.32		21.52		25.64	29.80	34.16	38.88	43.96		50.02	2 / 8			
reaction time	0.127	interval		3.76	3.96		8.20		4.12	4.16	4.36	4.72	5.08	6.06					14.16
		velocity	8.04	9.31	8.84		8.54		8.50	8.41	8.03	7.42	6.89	6.60	8.00				7.42
H1 lead leg	L	strides	22	15	15				15	15	15		17	20	134				

2017 IAAF World Championships (London, GBR)

FINAL (TV Analysis date 09-Aug-17

Henson (2020) - Athlete First: 2017 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.68	9.32	13.04	16.80	20.64		24.72	28.96	33.40	38.04	42.84		48.35	5 / 1			
reaction time	0.175	interval		3.64	3.72	3.76	3.84		4.08	4.24	4.44	4.64	4.80	5.51			11.12	12.16	13.88
		velocity	7.92	9.62	9.41	9.31	9.11		8.58	8.25	7.88	7.54	7.29	7.26	8.27		9.44	8.63	7.56
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18.5	159.5				
Copello, Yasmani (TUR) (198		time	5.92	9.60	13.36	17.24	21.24		25.44	29.72	34.16	38.64	43.16		48.49	8 / 2			
reaction time	0.211	interval		3.68	3.76	3.88	4.00		4.20	4.28	4.44	4.48	4.52	5.33			11.32	12.48	13.44
		velocity	7.60	9.51	9.31	9.02	8.75		8.33	8.18	7.88	7.81	7.74	7.50	8.25		9.28	8.41	7.81
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	18	159				
Clement, Kerron (USA) (198		time	5.92	9.72	13.52	17.28	21.20		25.32	29.52	33.84	38.32	43.12		48.52	4 / 3			
reaction time	0.153	interval		3.80	3.80	3.76	3.92		4.12	4.20	4.32	4.48	4.80	5.40			11.36	12.24	13.60
		velocity	7.60	9.21	9.21	9.31	8.93		8.50	8.33	8.10	7.81	7.29	7.41	8.24		9.24	8.58	7.72
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	14	17	155				
Mowatt, Kemar (JAM) (1995)		time	5.92	9.72	13.52	17.40	21.40		25.64	29.92	34.36	39.00	43.64		48.99	3 / 4			
reaction time	0.189	interval		3.80	3.80	3.88	4.00		4.24	4.28	4.44	4.64	4.64	5.35			11.48	12.52	13.72
		velocity	7.60	9.21	9.21	9.02	8.75		8.25	8.18	7.88	7.54	7.54	7.48	8.16		9.15	8.39	7.65
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18	164				
Holmes, TJ (USA) (1995)		time	6.04	9.88	13.84	17.80	21.84		25.92	30.24	34.64	39.20	43.72		49.00	7 / 5			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.210	interval		3.84	3.96	3.96	4.04	4.08	4.32	4.40	4.56	4.52	5.28			11.76	12.44	13.48
		velocity	7.45	9.11	8.84	8.84	8.66	8.58	8.10	7.95	7.68	7.74	7.58	8.16		8.93	8.44	7.79
H1 lead leg	L	strides	20	13	13	13	13	13	14	14	14	14	17.2	158.2				
Santos, Juander (DOM) (199		time	5.84	9.64	13.52	17.40	21.32	25.44	29.76	34.28	38.84	43.52		49.04	2 / 6			
reaction time	0.158	interval		3.80	3.88	3.88	3.92	4.12	4.32	4.52	4.56	4.68	5.52			11.56	12.36	13.76
		velocity	7.71	9.21	9.02	9.02	8.93	8.50	8.10	7.74	7.68	7.48	7.25	8.16		9.08	8.50	7.63
H1 lead leg	R	strides	22	14	14	14	14	14	15	15	15	15	19	171				
Samba, Abderrahmane (QAT		time	5.80	9.56	13.36	17.16	21.08	25.24	29.48	33.88	38.44	43.04		49.74	6 / 7			
reaction time	0.206	interval		3.76	3.80	3.80	3.92	4.16	4.24	4.40	4.56	4.60	6.70			11.36	12.32	13.56
		velocity	7.76	9.31	9.21	9.21	8.93	8.41	8.25	7.95	7.68	7.61	5.97	8.04		9.24	8.52	7.74
H1 lead leg	R	strides	21	13	13	13	13	13	13	14	14	14	19	160				
Hussein, Kariem (SUI) (1989)		time	6.00	9.84	13.72	17.72	21.80	26.00	30.40	34.92	39.52	44.28		50.07	9 / 8			
reaction time	0.163	interval		3.84	3.88	4.00	4.08	4.20	4.40	4.52	4.60	4.76	5.79			11.72	12.68	13.88
		velocity	7.50	9.11	9.02	8.75	8.58	8.33	7.95	7.74	7.61	7.35	6.91	7.99		8.96	8.28	7.56
H1 lead leg	L	strides	20	13	13	13	13	14	14	14	14	14	17.2	159.2				

Semi-Final 2

date 07-Aug-17

Morioka (2018) - Analysis of the race patterns of the top 400m hurdles in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	5.98	9.65	13.39	17.16	21.06		25.10	29.50	34.20	39.10	44.07		49.93	4 / 5			
reaction time	0.212	interval		3.67	3.74	3.77	3.90		4.04	4.40	4.70	4.90	4.97	5.86			11.18	12.34	14.57
		velocity	7.53	9.54	9.36	9.28	8.97		8.66	7.95	7.45	7.14	7.04	6.83	8.01		9.39	8.51	7.21
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	15	15	18	161				

Heat 1

date 06-Aug-17

Morioka (2018) - Analysis of the race patterns of the top 400m hurdles in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	6.22	9.89	13.66	17.46	21.36		25.46	29.86	34.40	39.00	43.90		49.65	3 / 2			
reaction time	0.316	interval		3.67	3.77	3.80	3.90		4.10	4.40	4.54	4.60	4.90	5.75			11.24	12.40	14.04
		velocity	7.23	9.54	9.28	9.21	8.97		8.54	7.95	7.71	7.61	7.14	6.96	8.06		9.34	8.47	7.48
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	15	15	18	161				

2017 Japanese National High School Championships (Yamagata, JPN)

FINAL

date 31-Jul-17

Kota (2017) - 70th high school championships: JAF scientific committee - biomechanics data collection

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shirao, Yusuke (JPN) (1999)		time	6.26	10.11	14.13	18.25	22.64		27.08	31.55	36.12	40.89	45.78		51.44	6 / 1			
reaction time	0.172	interval		3.85	4.02	4.12	4.39		4.44	4.47	4.57	4.77	4.89	5.66			11.99	13.30	14.23
		velocity	7.19	9.09	8.71	8.50	7.97		7.88	7.83	7.66	7.34	7.16	7.07	7.78		8.76	7.89	7.38
H1 lead leg		strides		13	13	13	14		14	15	15	15	15		127				
Yamauchi, Hiromu (JPN) (19		time	6.19	10.18	14.30	18.55	22.97		27.59	32.13	36.77	41.56	46.66		51.97	9 / 2			
reaction time	0.168	interval		3.99	4.12	4.25	4.42		4.62	4.54	4.64	4.79	5.10	5.31			12.36	13.58	14.53
		velocity	7.27	8.77	8.50	8.24	7.92		7.58	7.71	7.54	7.31	6.86	7.53	7.70		8.50	7.73	7.23
H1 lead leg		strides		14	14	14	14		15	15	15	15	16		132				
Tanabe, Jo (JPN) (1999)		time	6.41	10.43	14.53	18.75	23.14		27.64	32.25	37.05	41.89	46.88		52.41	8 / 3			
reaction time	0.187	interval		4.02	4.10	4.22	4.39		4.50	4.61	4.80	4.84	4.99	5.53			12.34	13.50	14.63
		velocity	7.02	8.71	8.54	8.29	7.97		7.78	7.59	7.29	7.23	7.01	7.23	7.63		8.51	7.78	7.18
H1 lead leg		strides		15	14	15	14		15	15	15	15	15		133				
Onodera, Shota (JPN) (1999)		time	6.42	10.51	14.66	19.04	23.59		28.13	32.68	37.34	42.28	47.30		52.56	7 / 4			
reaction time	0.183	interval		4.09	4.15	4.38	4.55		4.54	4.55	4.66	4.94	5.02	5.26			12.62	13.64	14.62
		velocity	7.01	8.56	8.43	7.99	7.69		7.71	7.69	7.51	7.09	6.97	7.60	7.61		8.32	7.70	7.18
H1 lead leg		strides		14	14	14	16		15	15	15	17	17		137				
Arisaka, Tomotaka (JPN) (19		time	6.26	10.36	14.56	18.94	23.47		28.13	32.75	37.49	42.29	47.13		52.58	4 / 5			
reaction time	0.200	interval		4.10	4.20	4.38	4.53		4.66	4.62	4.74	4.80	4.84	5.45			12.68	13.81	14.38
		velocity	7.19	8.54	8.33	7.99	7.73		7.51	7.58	7.38	7.29	7.23	7.34	7.61		8.28	7.60	7.30
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Hanaoka, Kazuma (JPN) (20(		time	6.31	10.39	14.53	18.74	23.09		27.59	32.20	36.97	41.99	47.18		52.88	5 / 6			
reaction time	0.192	interval		4.08	4.14	4.21	4.35		4.50	4.61	4.77	5.02	5.19	5.70			12.43	13.46	14.98
		velocity	7.13	8.58	8.45	8.31	8.05		7.78	7.59	7.34	6.97	6.74	7.02	7.56		8.45	7.80	7.01
H1 lead leg		strides		15	15	15	15		15	15	15	17	17		139				
Yamada, Hiromasa (JPN)		time	6.37	10.43	14.65	19.00	23.66		28.45	33.25	38.10	43.09	47.98		53.24	3 / 7			
reaction time	0.243	interval		4.06	4.22	4.35	4.66		4.79	4.80	4.85	4.99	4.89	5.26			12.63	14.25	14.73
		velocity	7.06	8.62	8.29	8.05	7.51		7.31	7.29	7.22	7.01	7.16	7.60	7.51		8.31	7.37	7.13
H1 lead leg		strides		14	14	14	15		15	15	15	16	16		134				
Ido, Takahiro (JPN) (1999)		time	6.21	10.36	14.61	19.00	23.56		28.28	32.87	37.75	42.69	47.80		53.27	2 / 8			
reaction time	0.143	interval		4.15	4.25	4.39	4.56		4.72	4.59	4.88	4.94	5.11	5.47			12.79	13.87	14.93
		velocity	7.25	8.43	8.24	7.97	7.68		7.42	7.63	7.17	7.09	6.85	7.31	7.51		8.21	7.57	7.03
H1 lead leg		strides		15	15	15	15		15	15	15	15	15		135				

2017 European U20 Championships (Grosseto, ITA) (TV Analysis)

FINAL

date 23-Jul-17

Henson (2020) - Athlete First: 2017 year end hurdle report

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Happio, Wilfried (FRA) (1998		time	5.88	9.64	13.56	17.60	21.84	26.04	30.56	34.92	39.48	44.24		49.93	6 / 1			
reaction time	0.234	interval		3.76	3.92	4.04	4.24	4.20	4.52	4.36	4.56	4.76	5.69	NJR PB		11.72	12.96	13.68
		velocity	7.65	9.31	8.93	8.66	8.25	8.33	7.74	8.03	7.68	7.35	7.03	8.01		8.96	8.10	7.68
H1 lead leg	L	strides		13	13	13	13	13	14	14	15	15	18	141				
Sibilio, Alessandro (ITA) (19		time	6.16	10.20	14.24	18.44	22.72	27.00	31.48	35.96	40.44	45.04		50.34	5 / 2			
reaction time	0.191	interval		4.04	4.04	4.20	4.28	4.28	4.48	4.48	4.48	4.60	5.30	PB		12.28	13.04	13.56
		velocity	7.31	8.66	8.66	8.33	8.18	8.18	7.81	7.81	7.81	7.61	7.55	7.95		8.55	8.05	7.74
H1 lead leg	R	strides		15	15	15	15	15	15	15	15	15	18	153				
Pineda, David José (ESP) (19		time	5.84	9.60	13.44	17.40	21.52	25.80	30.40	34.96	39.68	44.52		50.41	3 / 3			
reaction time	0.283	interval		3.76	3.84	3.96	4.12	4.28	4.60	4.56	4.72	4.84	5.89	NJR PB		11.56	13.00	14.12
		velocity	7.71	9.31	9.11	8.84	8.50	8.18	7.61	7.68	7.42	7.23	6.79	7.93		9.08	8.08	7.44
H1 lead leg	L	strides		15	15	15	15	15	17	17	17	17	21	164				
Ören, Sinan (TUR) (1998)		time	5.92	9.68	13.56	17.52	21.68	25.96	30.60	35.28	40.00	44.92		50.84	7 / 4			
reaction time	0.258	interval		3.76	3.88	3.96	4.16	4.28	4.64	4.68	4.72	4.92	5.92	NJR PB		11.60	13.08	14.32
		velocity	7.60	9.31	9.02	8.84	8.41	8.18	7.54	7.48	7.42	7.11	6.76	7.87		9.05	8.03	7.33
H1 lead leg	R	strides		14	14	13	13		14	15	15	15	18	131				
Čukman, Hrvoje (CRO) (1998		time	5.88	9.72	13.60	17.60	21.72	26.08	30.72	35.52	40.32	45.16		50.92	1 / 5			
reaction time	0.226	interval		3.84	3.88	4.00	4.12	4.36	4.64	4.80	4.80	4.84	5.76	PB		11.72	13.12	14.44
		velocity	7.65	9.11	9.02	8.75	8.50	8.03	7.54	7.29	7.29	7.23	6.94	7.86		8.96	8.00	7.27
H1 lead leg	R	strides		13	13	13	13	13	15	15	15	15	18	143				
Sinčukovs, Maksims (LAT) (		time	5.84	9.56	13.40	17.28	21.48	25.84	30.36	34.92	39.84	44.80		50.98	4 / 6			
reaction time	0.178	interval		3.72	3.84	3.88	4.20	4.36	4.52	4.56	4.92	4.96	6.18	NJR PB		11.44	13.08	14.44
		velocity	7.71	9.41	9.11	9.02	8.33	8.03	7.74	7.68	7.11	7.06	6.47	7.85		9.18	8.03	7.27
H1 lead leg	L	strides		14	14	13	15	15	15	15	16	16	20	153				
Porras, Aleix (ESP) (1999)		time	5.80	9.76	13.60	17.60	21.84	26.24	30.92	35.60	40.40	45.32		51.36	8 / 7			
reaction time	0.231	interval		3.96	3.84	4.00	4.24	4.40	4.68	4.68	4.80	4.92	6.04			11.80	13.32	14.40
		velocity	7.76	8.84	9.11	8.75	8.25	7.95	7.48	7.48	7.29	7.11	6.62	7.79		8.90	7.88	7.29
H1 lead leg	R	strides		14	14	15	15		15	15	15	15	18	136				
Nylander, Viktor (SWE) (1998		time	5.88	9.76	13.68	17.80	22.04	26.52	31.24	36.08	41.08	46.24		52.76	2 / 8			
reaction time	0.187	interval		3.88	3.92	4.12	4.24	4.48	4.72	4.84	5.00	5.16	6.52			11.92	13.44	15.00
		velocity	7.65	9.02	8.93	8.50	8.25	7.81	7.42	7.23	7.00	6.78	6.13	7.58		8.81	7.81	7.00
H1 lead leg	R	strides		13	14	14	14	14	15	15	15	15	19	148				

2017 Müller's Anniversary Games (London, GBR) (TV Analysis

FINAL date 09-Jul-17

Henson (2020) - Athlete First: 2017 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	6.00	9.72	13.44	17.24	21.24		25.48	29.80	34.16	38.60	43.08		48.02	7 / 1			
reaction time	0.157	interval		3.72	3.72	3.80	4.00		4.24	4.32	4.36	4.44	4.48	4.94			11.24	12.56	13.28
		velocity	7.50	9.41	9.41	9.21	8.75		8.25	8.10	8.03	7.88	7.81	8.10	8.33		9.34	8.36	7.91
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
McMaster, Kyron (IVB) (1997		time	5.76	9.32	13.04	16.72	20.60		24.68	28.96	33.36	37.92	42.76		48.12	6 / 2			
reaction time	0.164	interval		3.56	3.72	3.68	3.88		4.08	4.28	4.40	4.56	4.84	5.36			10.96	12.24	13.80
		velocity	7.81	9.83	9.41	9.51	9.02		8.58	8.18	7.95	7.68	7.23	7.46	8.31		9.58	8.58	7.61
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	15	18	160				
Copello, Yasmani (TUR) (198		time	6.00	9.68	13.52	17.40	21.40		25.52	29.88	34.32	38.76	43.16		48.24	8 / 3			
reaction time	0.187	interval		3.68	3.84	3.88	4.00		4.12	4.36	4.44	4.44	4.40	5.08			11.40	12.48	13.28
		velocity	7.50	9.51	9.11	9.02	8.75		8.50	8.03	7.88	7.88	7.95	7.87	8.29		9.21	8.41	7.91
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17.2	158.2				
Stigler, Michael (USA) (1992)		time	6.04	9.72	13.56	17.40	21.40		25.64	29.96	34.36	38.72	43.16		48.32	4 / 4			
reaction time	0.199	interval		3.68	3.84	3.84	4.00		4.24	4.32	4.40	4.36	4.44	5.16			11.36	12.56	13.20
		velocity	7.45	9.51	9.11	9.11	8.75		8.25	8.10	7.95	8.03	7.88	7.75	8.28		9.24	8.36	7.95
H1 lead leg	R	strides	22	13	13	13	13		13	15	15	15	15	18	165				
Futch, Eric (USA) (1993)		time	5.96	9.72	13.56	17.48	21.60		25.80	30.04	34.40	38.84	43.40		48.68	5 / 5			
reaction time	0.189	interval		3.76	3.84	3.92	4.12		4.20	4.24	4.36	4.44	4.56	5.28			11.52	12.56	13.36
		velocity	7.55	9.31	9.11	8.93	8.50		8.33	8.25	8.03	7.88	7.68	7.58	8.22		9.11	8.36	7.86
H1 lead leg	R	strides	22	14	14	13	14		15	14	15	15	15	18	169				
Green, Jack (GBR) (1991)		time	6.16	9.92	13.68	17.48	21.44		25.72	30.00	34.40	38.92	43.52		48.77	9 / 6			
reaction time	0.213	interval		3.76	3.76	3.80	3.96		4.28	4.28	4.40	4.52	4.60	5.25			11.32	12.52	13.52
		velocity	7.31	9.31	9.31	9.21	8.84		8.18	8.18	7.95	7.74	7.61	7.62	8.20		9.28	8.39	7.77
H1 lead leg	R	strides	22	14	13	13	13		14	14	15	15	15	18.7	166.7				
Downing, Quincy (USA) (19		time	5.96	9.76	13.48	17.28	21.16		25.16	29.52	34.04	38.64	43.40		48.81	2 / 7			
reaction time	0.144	interval		3.80	3.72	3.80	3.88		4.00	4.36	4.52	4.60	4.76	5.41			11.32	12.24	13.88
		velocity	7.55	9.21	9.41	9.21	9.02		8.75	8.03	7.74	7.61	7.35	7.39	8.20		9.28	8.58	7.56
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	15	17.5	160.5				
Paul, Jacob (GBR) (1995)		time	6.00	9.72	13.56	17.48	21.56		25.72	30.04	34.48	39.08	43.76		49.49	1 / 8			

reaction time	0.156	interval		3.72	3.84	3.92	4.08	4.16	4.32	4.44	4.60	4.68	5.73	PB		11.48	12.56	13.72
		velocity	7.50	9.41	9.11	8.93	8.58	8.41	8.10	7.88	7.61	7.48	6.98	8.08		9.15	8.36	7.65
H1 lead leg	L	strides	21	14	14	14	14	14	14	15	15	15		150				
Hann, Mamadou Kasse (FRA		time	6.08	9.96	13.84	17.64	21.60	25.72	30.16	34.64	39.36	44.16		49.50	3 / 9			
reaction time	0.151	interval		3.88	3.88	3.80	3.96	4.12	4.44	4.48	4.72	4.80	5.34			11.56	12.52	14.00
		velocity	7.40	9.02	9.02	9.21	8.84	8.50	7.88	7.81	7.42	7.29	7.49	8.08		9.08	8.39	7.50
H1 lead leg	L	strides	21	14	14	13	13	13	14	14	15	14		145				

2017 Nambu Memorial (Sapporo, JPN)

FINAL date 09-Jul-17

(2017) - tfdata-store.com/2017/07/11/post-1019/

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Ishida, Yusuke (JPN) (1995)		time	6.14	9.93	13.82	17.77	21.79		26.06	30.35	34.87	39.53	44.20		49.35	6 / 1			
reaction time		interval		3.79	3.89	3.95	4.02		4.27	4.29	4.52	4.66	4.67	5.15	PB		11.63	12.58	13.85
		velocity	7.33	9.23	9.00	8.86	8.71		8.20	8.16	7.74	7.51	7.49	7.77	8.11		9.03	8.35	7.58
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18	164				
Matsushita, Yuki (JPN) (1991		time	6.16	9.90	13.73	17.65	21.68		25.91	30.28	34.80	39.46	44.13		49.41	7 / 2			
reaction time		interval		3.74	3.83	3.92	4.03		4.23	4.37	4.52	4.66	4.67	5.28			11.49	12.63	13.85
		velocity	7.31	9.36	9.14	8.93	8.68		8.27	8.01	7.74	7.51	7.49	7.58	8.10		9.14	8.31	7.58
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.5	164.5				
Maeno, Kei (JPN) (1991)		time	6.03	9.77	13.64	17.57	21.78		26.03	30.40	34.85	39.44	44.11		49.48	4 / 3			
reaction time		interval		3.74	3.87	3.93	4.21		4.25	4.37	4.45	4.59	4.67	5.37			11.54	12.83	13.71
		velocity	7.46	9.36	9.04	8.91	8.31		8.24	8.01	7.87	7.63	7.49	7.45	8.08		9.10	8.18	7.66
H1 lead leg	R	strides	21	13	13	13	14		14	15	15	15	15	18.2	166.2				
Nozawa, Keisuke (JPN) (1991		time	5.99	9.69	13.47	17.32	21.34		25.50	29.77	34.25	39.04	44.30		50.68	8 / 6			
reaction time		interval		3.70	3.78	3.85	4.02		4.16	4.27	4.48	4.79	5.26	6.38			11.33	12.45	14.53
		velocity	7.51	9.46	9.26	9.09	8.71		8.41	8.20	7.81	7.31	6.65	6.27	7.89		9.27	8.43	7.23
H1 lead leg	L	strides	21	13	13	13	14		14	14	14	15	16	20	167				

2017 Athletissima (Lausanne, SUI) (TV Analysis)

FINAL date 06-Jul-17

Henson (2020) - Athlete First: 2017 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hussein, Kariem (SUI) (1989)		time	5.96	9.76	13.68	17.68	21.72		25.88	30.16	34.48	39.00	43.56		48.79	5 / 1			
reaction time	0.170	interval		3.80	3.92	4.00	4.04		4.16	4.28	4.32	4.52	4.56	5.23			11.72	12.48	13.40
		velocity	7.55	9.21	8.93	8.75	8.66		8.41	8.18	8.10	7.74	7.68	7.65	8.20		8.96	8.41	7.84
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	17	158				
Robinson, Byron (USA) (199		time	5.84	9.64	13.68	17.80	21.88		26.00	30.12	34.40	38.80	43.36		48.88	4 / 2			
reaction time	0.151	interval		3.80	4.04	4.12	4.08		4.12	4.12	4.28	4.40	4.56	5.52			11.96	12.32	13.24
		velocity	7.71	9.21	8.66	8.50	8.58		8.50	8.50	8.18	7.95	7.68	7.25	8.18		8.78	8.52	7.93
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	20	177				
Mági, Rasmus (EST) (1992)		time	6.08	9.92	13.80	17.72	21.68		25.84	30.24	34.64	39.20	43.72		48.94	7 / 3			
reaction time	0.127	interval		3.84	3.88	3.92	3.96		4.16	4.40	4.40	4.56	4.52	5.22			11.64	12.52	13.48
		velocity	7.40	9.11	9.02	8.93	8.84		8.41	7.95	7.95	7.68	7.74	7.66	8.17		9.02	8.39	7.79
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.2	159.2				
Jackson, Bershawn (USA) (1		time	5.72	9.64	13.84	18.12	22.32		26.44	30.56	34.76	39.12	43.64		49.04	3 / 4			
reaction time	0.140	interval		3.92	4.20	4.28	4.20		4.12	4.12	4.20	4.36	4.52	5.40			12.40	12.44	13.08
		velocity	7.87	8.93	8.33	8.18	8.33		8.50	8.50	8.33	8.03	7.74	7.41	8.16		8.47	8.44	8.03
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Fredericks, Cornel (RSA) (19		time	6.00	9.76	13.60	17.48	21.48		25.56	29.80	34.20	38.80	43.52		49.32	8 / 5			
reaction time	0.137	interval		3.76	3.84	3.88	4.00		4.08	4.24	4.40	4.60	4.72	5.80			11.48	12.32	13.72
		velocity	7.50	9.31	9.11	9.02	8.75		8.58	8.25	7.95	7.61	7.42	6.90	8.11		9.15	8.52	7.65
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15	20	172				
Stigler, Michael (USA) (1992)		time	6.00	9.80	13.72	17.68	21.76		26.04	30.36	34.72	39.32	44.12		49.86	6 / 6			
reaction time	0.224	interval		3.80	3.92	3.96	4.08		4.28	4.32	4.36	4.60	4.80	5.74			11.68	12.68	13.76
		velocity	7.50	9.21	8.93	8.84	8.58		8.18	8.10	8.03	7.61	7.29	6.97	8.02		8.99	8.28	7.63
H1 lead leg	R	strides	22	13	13	13	13		15	15	15	15	15	18	167				
van Zyl, LJ (RSA) (1985)		time	5.92	9.68	13.64	17.68	21.80		25.96	30.28	34.68	39.28	44.12		50.04	2 / 7			
reaction time	0.152	interval		3.76	3.96	4.04	4.12		4.16	4.32	4.40	4.60	4.84	5.92			11.76	12.60	13.84
		velocity	7.60	9.31	8.84	8.66	8.50		8.41	8.10	7.95	7.61	7.23	6.76	7.99		8.93	8.33	7.59
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	16	16	19.2	174.2				
Mfomkpa, Alain-Hervé (SUI)		time	6.04	9.80	13.72	17.64	21.68		25.96	30.36	35.04	40.00	45.24		51.45	1 / 8			
reaction time	0.156	interval		3.76	3.92	3.92	4.04		4.28	4.40	4.68	4.96	5.24	6.21			11.60	12.72	14.88
		velocity	7.45	9.31	8.93	8.93	8.66		8.18	7.95	7.48	7.06	6.68	6.44	7.77		9.05	8.25	7.06
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	15	16		146				

2017 USATF Championships (Sacramento, CA) (TV Analysis)

FINAL date 25-Jun-17

Henson (2020) - Athlete First: 2017 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Futch, Eric (USA) (1993)		time	5.96	9.79	13.65	17.58	21.65		25.65	29.82	34.03	38.34	42.79		48.18	4 / 1			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time		interval		3.83	3.86	3.93	4.07	4.00	4.17	4.21	4.31	4.45	5.39	PB		11.62	12.24	12.97
		velocity	7.55	9.14	9.07	8.91	8.60	8.75	8.39	8.31	8.12	7.87	7.42	8.30		9.04	8.58	8.10
H1 lead leg	R	strides	22	14	14	13	13		14	15	15	15	18	153				
Stigler, Michael (USA) (1992)		time	6.10	9.79	13.58	17.38	21.31		29.89	34.20	38.55	43.07		48.26	8 / 2			
reaction time		interval		3.69	3.79	3.80	3.93		8.58	4.31	4.35	4.52	5.19	PB		11.28	12.51	13.18
		velocity	7.38	9.49	9.23	9.21	8.91		8.16	8.12	8.05	7.74	7.71	8.29		9.31	8.39	7.97
H1 lead leg	R	strides	22	13	13	13	13			15	15	15	18.2	137.2				
Holmes, TJ (USA) (1995)		time	5.93	9.65	13.41	17.07	20.93	24.86	29.31	33.65	38.34	43.14		48.44	2 / 3			
reaction time		interval		3.72	3.76	3.66	3.86	3.93	4.45	4.34	4.69	4.80	5.30	PB		11.14	12.24	13.83
		velocity	7.59	9.41	9.31	9.56	9.07	8.91	7.87	8.06	7.46	7.29	7.55	8.26		9.43	8.58	7.59
H1 lead leg	L	strides	20	13	13	13	13	13	14	14	15	15	18	161				
Robinson, Byron (USA) (19		time	5.79	9.55	13.51	17.58	21.68	25.69	29.87	34.07	38.42	42.86		48.50	6 / 4			
reaction time		interval		3.76	3.96	4.07	4.10	4.01	4.18	4.20	4.35	4.44	5.64	PB		11.79	12.29	12.99
		velocity	7.77	9.31	8.84	8.60	8.54	8.73	8.37	8.33	8.05	7.88	7.09	8.25		8.91	8.54	8.08
H1 lead leg	L	strides	22	15	15	15	15	15	15	15	15	15	19.5	176.5				
Dutch, Johnny (USA) (1989)		time	5.96	9.62	13.41	17.20	21.20	25.31	29.51	33.79	38.27	43.00		48.60	3 / 5			
reaction time		interval		3.66	3.79	3.79	4.00	4.11	4.20	4.28	4.48	4.73	5.60			11.24	12.31	13.49
		velocity	7.55	9.56	9.23	9.23	8.75	8.52	8.33	8.18	7.81	7.40	7.14	8.23		9.34	8.53	7.78
H1 lead leg	R	strides	22	13	13	13	13	14	14	15	15	15	19	166				
Downing, Quincy (USA) (19		time	5.89	9.55	13.20	16.93	20.82		29.17	33.62	38.24	43.07		48.70	7 / 6			
reaction time		interval		3.66	3.65	3.73	3.89		8.35	4.45	4.62	4.83	5.63			11.04	12.24	13.90
		velocity	7.64	9.56	9.59	9.38	9.00		8.38	7.87	7.58	7.25	7.10	8.21		9.51	8.58	7.55
H1 lead leg	R	strides	21	13	13	13	13			14	14	15	17.7	133.7				
Clement, Kerron (USA) (198		time	6.07	9.90	13.69	17.48	21.41	25.55	29.86	34.21	38.79	43.45		48.91	5 / 7			
reaction time		interval		3.83	3.79	3.79	3.93	4.14	4.31	4.35	4.58	4.66	5.46			11.41	12.38	13.59
		velocity	7.41	9.14	9.23	9.23	8.91	8.45	8.12	8.05	7.64	7.51	7.33	8.18		9.20	8.48	7.73
H1 lead leg	R	strides	20	13	13	13	13	13	13	13	13	13	16.5	153.5				
Jackson, Bershawn (USA) (1		time	5.79	9.69	13.79	17.93	22.14		30.31	34.58	39.03	43.83		49.51	1 / 8			
reaction time		interval		3.90	4.10	4.14	4.21		8.17	4.27	4.45	4.80	5.68			12.14	12.38	13.52
		velocity	7.77	8.97	8.54	8.45	8.31		8.57	8.20	7.87	7.29	7.04	8.08		8.65	8.48	7.77
H1 lead leg	L	strides	22	15		15	15			15	15	17	19.2	133.2				

2017 Japanese National Championships (Osaka, JPN)

FINAL date 24-Jun-17

Morioka (2018) - Analysis of the race patterns of the top 400m hurdles in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	6.01	9.71	13.53	17.37	21.39		25.54	29.98	34.50	39.17	43.91		49.32	/ 1			
reaction time	0.193	interval		3.70	3.82	3.84	4.02		4.15	4.44	4.52	4.67	4.74	5.41			11.36	12.61	13.93
		velocity	7.49	9.46	9.16	9.11	8.71		8.43	7.88	7.74	7.49	7.38	7.39	8.11		9.24	8.33	7.54
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				
Ishida, Yusuke (JPN) (1995)		time	6.16	9.96	13.86	17.77	21.76		26.06	30.38	34.90	39.59	44.34		49.79	/ 2			
reaction time	0.185	interval		3.80	3.90	3.91	3.99		4.30	4.32	4.52	4.69	4.75	5.45			11.61	12.61	13.96
		velocity	7.31	9.21	8.97	8.95	8.77		8.14	8.10	7.74	7.46	7.37	7.34	8.03		9.04	8.33	7.52
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Matsushita, Yuki (JPN) (1991		time	6.14	9.96	13.88	17.80	21.79		26.09	30.43	34.92	39.54	44.33		49.92	/ 3			
reaction time	0.155	interval		3.82	3.92	3.92	3.99		4.30	4.34	4.49	4.62	4.79	5.59			11.66	12.63	13.90
		velocity	7.33	9.16	8.93	8.93	8.77		8.14	8.06	7.80	7.58	7.31	7.16	8.01		9.01	8.31	7.55
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				

2017 Bauhaus Athletics (Stockholm, SWE) (TV Analysis)

FINAL date 18-Jun-17

Henson (2020) - Athlete First: 2017 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.76	9.48	13.24	17.04	21.00		25.20	29.44	33.92	38.68	43.44		48.82	7 / 1			
reaction time	0.139	interval		3.72	3.76	3.80	3.96		4.20	4.24	4.48	4.76	4.76	5.38			11.28	12.40	14.00
		velocity	7.81	9.41	9.31	9.21	8.84		8.33	8.25	7.81	7.35	7.35	7.43	8.19		9.31	8.47	7.50
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.7	158.7				
Mági, Rasmus (EST) (1992)		time	6.04	9.84		17.64	21.68		25.88	30.24	34.68	39.24	43.84		49.16	3 / 2			
reaction time	0.142	interval		3.80		7.80	4.04		4.20	4.36	4.44	4.56	4.60	5.32			11.60	12.60	13.60
		velocity	7.45	9.21		8.97	8.66		8.33	8.03	7.88	7.68	7.61	7.52	8.14		9.05	8.33	7.72
H1 lead leg	L	strides	21	13			13		13	14		14	14	17.5	119.5				
Copello, Yasmani (TUR) (19		time	6.00	9.72		17.48	21.56		25.72	30.12	34.60	39.20	43.84		49.18	6 / 3			
reaction time	0.178	interval		3.72		7.76	4.08		4.16	4.40	4.48	4.60	4.64	5.34			11.48	12.64	13.72
		velocity	7.50	9.41		9.02	8.58		8.41	7.95	7.81	7.61	7.54	7.49	8.13		9.15	8.31	7.65
H1 lead leg	R	strides	20	13			13		13	14	14	14	14	17.7	132.7				
Green, Jack (GBR) (1991)		time	6.08	9.88	13.60	17.44	21.48		25.76	30.12	34.60	39.16	43.80		49.29	8 / 4			
reaction time	0.203	interval		3.80	3.72	3.84	4.04		4.28	4.36	4.48	4.56	4.64	5.49			11.36	12.68	13.68
		velocity	7.40	9.21	9.41	9.11	8.66		8.18	8.03	7.81	7.68	7.54	7.29	8.12		9.24	8.28	7.68
H1 lead leg	R	strides	22	14	13	13	14		14	15	15	15	15	19.2	169.2				

Hann, Mamadou Kasse (FRA		time	6.04	9.92		17.76	21.88		26.08	30.60	35.16	39.80	44.44		49.72	5 / 5			
reaction time	0.158	interval		3.88		7.84	4.12		4.20	4.52	4.56	4.64	4.64	5.28			11.72	12.84	13.84
		velocity	7.45	9.02		8.93	8.50		8.33	7.74	7.68	7.54	7.54	7.58	8.05		8.96	8.18	7.59
H1 lead leg	L	strides	21	13			13		14	14	14	14	14		117				
Jackson, Bershawn (USA) (1		time	5.72	9.52		17.68	21.80		25.92	30.12	34.64	39.36	44.08		50.28	4 / 6			
reaction time	0.135	interval		3.80		8.16	4.12		4.12	4.20	4.52	4.72	4.72	6.20			11.96	12.44	13.96
		velocity	7.87	9.21		8.58	8.50		8.50	8.33	7.74	7.42	7.42	6.45	7.96		8.78	8.44	7.52
H1 lead leg	L	strides	22	15			15		15	15		16	15		113				
Andersson, Isak (SWE) (199		time	6.08	9.96		18.16	22.36		26.64	31.12	35.64	40.24	44.92		50.50	1 / 7			
reaction time	0.202	interval		3.88		8.20	4.20		4.28	4.48	4.52	4.60	4.68	5.58	**PB**		12.08	12.96	13.80
		velocity	7.40	9.02		8.54	8.33		8.18	7.81	7.74	7.61	7.48	7.17	7.92		8.69	8.10	7.61
H1 lead leg	R	strides	23	15			15		15	15		15	15		113				
van Zyl, LJ (RSA) (1985)		time	5.88	9.64		17.40	21.44		25.60	30.00		39.04	43.88		51.42	2 / 8			
reaction time	0.143	interval		3.76		7.76	4.04		4.16	4.40		9.04	4.84	7.54			11.52	12.60	13.88
		velocity	7.65	9.31		9.02	8.66		8.41	7.95		7.74	7.23	5.31	7.78		9.11	8.33	7.56
H1 lead leg	L	strides	22	14			14		14	15			16		95				

2017 Bislett Games (Oslo, NOR) (TV Analysis)

FINAL date 15-Jun-17

Henson (2020) - Athlete First: 2017 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Warholm, Karsten (NOR) (19		time	5.86	9.46	13.06	16.93	20.86		25.00	29.30	33.56	38.20	42.90		48.25	7 / 1			
reaction time	0.149	interval		3.60	3.60	3.87	3.93		4.14	4.30	4.26	4.64	4.70	5.35	**NR PB**		11.07	12.37	13.60
		velocity	7.68	9.72	9.72	9.04	8.91		8.45	8.14	8.22	7.54	7.45	7.48	8.29		9.49	8.49	7.72
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	17.5	158.5				
Copello, Yasmani (TUR) (198		time	5.96	9.70	13.53	17.46	21.50		25.60	30.00	34.30	38.76	43.20		48.44	4 / 2			
reaction time	0.188	interval		3.74	3.83	3.93	4.04		4.10	4.40	4.30	4.46	4.44	5.24			11.50	12.54	13.20
		velocity	7.55	9.36	9.14	8.91	8.66		8.54	7.95	8.14	7.85	7.88	7.63	8.26		9.13	8.37	7.95
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17.5	158.5				
Barr, Thomas (IRL) (1992)		time	6.13	9.83	13.60				25.83	30.23	34.70	39.26	43.80		48.95	1 / 3			
reaction time	0.193	interval		3.70	3.77				12.23	4.40	4.47	4.56	4.54	5.15					13.57
		velocity	7.34	9.46	9.28				8.59	7.95	7.83	7.68	7.71	7.77	8.17				7.74
H1 lead leg	L	strides	22	13	13					14	14	14	15	18.5	123.5				
Hann, Mamadou Kasse (FRA		time	6.03	9.80	13.53	17.36	21.26		25.46	29.76	34.26	39.00	43.73		48.97	5 / 4			
reaction time	0.176	interval		3.77	3.73	3.83	3.90		4.20	4.30	4.50	4.74	4.73	5.24			11.33	12.40	13.97
		velocity	7.46	9.28	9.38	9.14	8.97		8.33	8.14	7.78	7.38	7.40	7.63	8.17		9.27	8.47	7.52
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	17.2	163.2				
Mági, Rasmus (EST) (1992)		time	6.03	9.83	13.70	17.66	21.73		25.86	30.33	34.73	39.23	43.80		49.10	3 / 5			
reaction time	0.147	interval		3.80	3.87	3.96	4.07		4.13	4.47	4.40	4.50	4.57	5.30			11.63	12.67	13.47
		velocity	7.46	9.21	9.04	8.84	8.60		8.47	7.83	7.95	7.78	7.66	7.55	8.15		9.03	8.29	7.80
H1 lead leg	L	strides	21	13	13	13	13			14	14	14	14	17.2	146.2				
Hussein, Kariem (SUI) (1989)		time	6.03	9.70	13.53	17.56			25.86	30.20	34.53	39.03	43.73		49.37	2 / 6			
reaction time	0.162	interval		3.67	3.83	4.03			8.30	4.34	4.33	4.50	4.70	5.64			11.53	12.64	13.53
		velocity	7.46	9.54	9.14	8.68			8.43	8.06	8.08	7.78	7.45	7.09	8.10		9.11	8.31	7.76
H1 lead leg	L	strides	20	13	13	13				14	14	14	15	17.2	133.2				
van Zyl, LJ (RSA) (1985)		time	5.96	9.66	13.43	17.46	21.60		25.86	30.30	34.73	39.30	44.06		49.89	8 / 7			
reaction time	0.158	interval		3.70	3.77	4.03	4.14		4.26	4.44	4.43	4.57	4.76	5.83			11.50	12.84	13.76
		velocity	7.55	9.46	9.28	8.68	8.45		8.22	7.88	7.90	7.66	7.35	6.86	8.02		9.13	8.18	7.63
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	15	15		152				
Clement, Kerron (USA) (198		time	5.90	9.53	13.16	16.93	20.83		25.03	29.53	34.36	39.20	44.46		50.52	6 / 8			
reaction time	0.164	interval		3.63	3.63	3.77	3.90		4.20	4.50	4.83	4.84	5.26	6.06			11.03	12.60	14.93
		velocity	7.63	9.64	9.64	9.28	8.97		8.33	7.78	7.25	7.23	6.65	6.60	7.92		9.52	8.33	7.03
H1 lead leg	R	strides	20	13	13	13	13		13	15	15	14	16		145				

2017 Shimane High School Championships (Honshu, JPN)

FINAL date 27-May-17

Shimizu (2018) - shimane high school championships 2018 - biomechanics data analysis

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
阿川 公希	time	6.27	10.37	14.60	18.90	23.33		27.97	33.00	37.93	43.03	48.40		54.54	7 / 1			
reaction time	interval		4.10	4.23	4.30	4.43		4.64	5.03	4.93	5.10	5.37	6.14			12.63	14.10	15.40
	velocity	7.18	8.54	8.27	8.14	7.90		7.54	6.96	7.10	6.86	6.52	6.51	7.33		8.31	7.45	6.82
H1 lead leg	strides	22	15	15	15	15		15	16	16	17	17	21	184				

2017 Seiko Golden Grand Prix (Kawasaki, JPN)

(2017) - tfdata-store.com/2017/05/22/post-605/

FINAL date 21-May-17

Morioka (2018) - Analysis of the race patterns of the top 400m hurdles in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	5.97	9.67	13.49	17.34	21.31		25.38	29.75	34.22	38.89	43.66		49.20	2 / 2		*Morioka (2018)*	
reaction time	0.191	interval		3.70	3.82	3.85	3.97		4.07	4.37	4.47	4.67	4.77	5.54			11.37	12.41	13.91
		velocity	7.54	9.46	9.16	9.09	8.82		8.60	8.01	7.83	7.49	7.34	7.22	8.13		9.23	8.46	7.55
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	15	15	18	161				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Konishi, Yuta (JPN) (1990)		time	6.13	9.99	13.86	17.82	21.94	26.18	30.45	34.89	39.54	44.38		49.95	4 / 5	*(2017) - tfdata-store.com*		
reaction time	0.146	interval		3.86	3.87	3.96	4.12	4.24	4.27	4.44	4.65	4.84	5.57			11.69	12.63	13.93
		velocity	7.34	9.07	9.04	8.84	8.50	8.25	8.20	7.88	7.53	7.23	7.18	8.01		8.98	8.31	7.54
H1 lead leg	L	strides	20	13	13	13	13	14	14	15	15	15	19	164				

2017 Gunma High School Athletics Meeting (Maebashi, JPN)

FINAL date 21-May-17 *(2017) - tfdata-store.com/2017/05/20/post-584/*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shirao, Yusuke (JPN) (1999)		time	6.15	9.89	13.73	17.72	21.85		26.07	30.42	34.99	39.74	44.70		50.42	5 / 1			
reaction time		interval		3.74	3.84	3.99	4.13		4.22	4.35	4.57	4.75	4.96	5.72	PB		11.57	12.70	14.28
		velocity	7.32	9.36	9.11	8.77	8.47		8.29	8.05	7.66	7.37	7.06	6.99	7.93		9.08	8.27	7.35
H1 lead leg	R	strides	21	13	13	14	14		14	14	15	15	15	18.5	166.5				

2017 Jamaica International Invitational (Kingston, JAM) (TV Analysis)

FINAL date 20-May-17 *Henson (2020) - Athlete First: 2017 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
McMaster, Kyron (IVB) (1997		time		9.51	13.28	17.08	21.02		24.99	29.13	33.43	37.90			47.80	5 / 1			
reaction time		interval			3.77	3.80	3.94		3.97	4.14	4.30	4.47			NR PB			12.05	
		velocity		8.41	9.28	9.21	8.88		8.82	8.45	8.14	7.83			8.37			8.71	
H1 lead leg	R	strides			13	13	13		13	13	14	14	14		107				
Hyde, Jaheel (JAM) (1997)		time	5.84	9.64	13.51	17.48	21.55		25.62	29.86	34.16	38.57	43.21		48.52	3 / 2			
reaction time		interval		3.80	3.87	3.97	4.07		4.07	4.24	4.30	4.41	4.64	5.31	PB		11.64	12.38	13.35
		velocity	7.71	9.21	9.04	8.82	8.60		8.60	8.25	8.14	7.94	7.54	7.53	8.24		9.02	8.48	7.87
H1 lead leg	L	strides	22	14	14	13	14			14	14	15	15	18.5	153.5				
Jackson, Bershawn (USA) (1		time	5.74	9.54	13.54	17.65	21.75		25.86	29.93	34.16	38.54	43.21		48.63	4 / 3			
reaction time		interval		3.80	4.00	4.11	4.10		4.11	4.07	4.23	4.38	4.67	5.42			11.91	12.28	13.28
		velocity	7.84	9.21	8.75	8.52	8.54		8.52	8.60	8.27	7.99	7.49	7.38	8.23		8.82	8.55	7.91
H1 lead leg	L	strides	22	15	15	15	15			15	15	15	15	19	161				
Culson, Javier (PUR) (1983)		time		9.61	13.28	17.08	21.05		25.19	29.46	33.86	38.47	43.27		48.76	6 / 4			
reaction time		interval			3.67	3.80	3.97		4.14	4.27	4.40	4.61	4.80	5.49				12.38	13.81
		velocity		8.32	9.54	9.21	8.82		8.45	8.20	7.95	7.59	7.29	7.29	8.20			8.48	7.60
H1 lead leg		strides			13	13	13		13	13	13	14	14	17.2	123.2				

2017 Tokyo High School Championships (Tokyo, JPN)

FINAL date 14-May-17 *(2017) - tfdata-store.com/2017/05/14/post-470/*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Inoue, Daichi (JPN) (1999)		time	6.25	10.05	13.95	17.90	21.88		26.05	30.69	35.34	40.18	45.08		50.37	5 / 1			
reaction time		interval		3.80	3.90	3.95	3.98		4.17	4.64	4.65	4.84	4.90	5.29	PB		11.65	12.79	14.39
		velocity	7.20	9.21	8.97	8.86	8.79		8.39	7.54	7.53	7.23	7.14	7.56	7.94		9.01	8.21	7.30
H1 lead leg		strides		13	13	13	13		13	15	15	15	15		125				

2017 Shanghai Diamond League (Shanghai, CHN) (TV Analysis)

FINAL date 13-May-17 *Henson (2021) - Athlete First: 2017 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Jackson, Bershawn (USA) (1		time	5.64	9.40	13.40	17.56	21.60		25.68	29.76	33.96	38.40	43.04		48.63	4 / 1			
reaction time	0.127	interval		3.76	4.00	4.16	4.04		4.08	4.08	4.20	4.44	4.64	5.59			11.92	12.20	13.28
		velocity	7.98	9.31	8.75	8.41	8.66		8.58	8.58	8.33	7.88	7.54	7.16	8.23		8.81	8.61	7.91
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
van Zyl, LJ (RSA) (1985)		time	5.88	9.64	13.52	17.52	21.60		25.80	30.16	34.60	39.12	43.76		49.35	7 / 2			
reaction time	0.155	interval		3.76	3.88	4.00	4.08		4.20	4.36	4.44	4.52	4.64	5.59			11.64	12.64	13.60
		velocity	7.65	9.31	9.02	8.75	8.58		8.33	8.03	7.88	7.74	7.54	7.16	8.11		9.02	8.31	7.72
H1 lead leg	L	strides	22	14	14	14	14		15	14	15	15	15	19	171				
Mägi, Rasmus (EST) (1992)		time	6.08	9.92	13.80	17.76	21.84		26.04	30.44	34.88	39.48	44.12		49.38	8 / 3			
reaction time	0.138	interval		3.84	3.88	3.96	4.08		4.20	4.40	4.44	4.60	4.64	5.26			11.68	12.68	13.68
		velocity	7.40	9.11	9.02	8.84	8.58		8.33	7.95	7.88	7.61	7.54	7.60	8.10		8.99	8.28	7.68
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.5	159.5				
Clement, Kerron (USA) (198!		time	5.96	9.72	13.48	17.36	21.40		25.60	29.96	34.48	39.24	44.04		49.43	6 / 4			
reaction time	0.155	interval		3.76	3.76	3.88	4.04		4.20	4.36	4.52	4.76	4.80	5.39			11.40	12.60	14.08
		velocity	7.55	9.31	9.31	9.02	8.66		8.33	8.03	7.74	7.35	7.29	7.42	8.09		9.21	8.33	7.46
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	14	14	16.5	155.5				
Culson, Javier (PUR) (1984)		time	5.84	9.48	13.24	17.12	21.16		25.40	29.76	34.36	39.08	44.08		49.90	2 / 5			
reaction time	0.194	interval		3.64	3.76	3.88	4.04		4.24	4.36	4.60	4.72	5.00	5.82			11.28	12.64	14.32
		velocity	7.71	9.62	9.31	9.02	8.66		8.25	8.03	7.61	7.42	7.00	6.87	8.02		9.31	8.31	7.33
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	15	17.5	158.5				
Hussein, Kariem (SUI) (1989)		time	6.04	9.92	13.92	18.08	22.24		26.40	30.72	35.12				50.02	9 / 6			
reaction time	0.177	interval		3.88	4.00	4.16	4.16		4.16	4.32	4.40						12.04	12.64	
		velocity	7.45	9.02	8.75	8.41	8.41		8.41	8.10	7.95				8.00		8.72	8.31	
H1 lead leg	L	strides	20	13	13	13	13		13	14	14				113				

Whyte, Annsert (JAM) (1987		time	5.76	9.36	13.16	17.00	20.92	25.08	29.56	34.24	39.08	44.16		50.18	3 / 7			
reaction time	0.154	interval		3.60	3.80	3.84	3.92	4.16	4.48	4.68	4.84	5.08	6.02			11.24	12.56	14.60
		velocity	7.81	9.72	9.21	9.11	8.93	8.41	7.81	7.48	7.23	6.89	6.64	7.97		9.34	8.36	7.19
H1 lead leg	L	strides	21	13	14	14	13	14	15	15	15	16	19.2	169.2				
Bett, Nicholas (KEN) (1990)		time	6.04	9.72	13.52	17.40	21.40	25.52	30.00	34.64	39.52			51.09	5 / 8			
reaction time	0.189	interval		3.68	3.80	3.88	4.00	4.12	4.48	4.64	4.88					11.36	12.60	
		velocity	7.45	9.51	9.21	9.02	8.75	8.50	7.81	7.54	7.17			7.83		9.24	8.33	
H1 lead leg	R	strides	21	13	13	13	13	13	13	13	15	15		142				

2017 Doha Diamond League (Doha, QAT) (TV Analysis)

FINAL date 05-May-17

Henson (2020) - Athlete First: 2017 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT		time	5.80	9.43	13.03	16.66	20.43		24.40	28.56	32.96	37.66	42.60		48.44	4 / 1			
reaction time	0.185	interval		3.63	3.60	3.63	3.77		3.97	4.16	4.40	4.70	4.94	5.84			10.86	11.90	14.04
		velocity	7.76	9.64	9.72	9.64	9.28		8.82	8.41	7.95	7.45	7.09	6.85	8.26		9.67	8.82	7.48
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	15	18	159				
Clement, Kerron (USA) (198		time	6.06	9.86	13.60	17.40	21.40		25.60	29.90	34.36	39.20	44.06		49.40	6 / 2			
reaction time	0.176	interval		3.80	3.74	3.80	4.00		4.20	4.30	4.46	4.84	4.86	5.34			11.34	12.50	14.16
		velocity	7.43	9.21	9.36	9.21	8.75		8.33	8.14	7.85	7.23	7.20	7.49	8.10		9.26	8.40	7.42
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	14	14	16	155				
van Zyl, LJ (RSA) (1985)		time	5.96	9.83	13.70	17.80	21.96		26.16	30.53	34.90	39.43	44.06		49.49	8 / 3			
reaction time	0.156	interval		3.87	3.87	4.10	4.16		4.20	4.37	4.37	4.53	4.63	5.43			11.84	12.73	13.53
		velocity	7.55	9.04	9.04	8.54	8.41		8.33	8.01	8.01	7.73	7.56	7.37	8.08		8.87	8.25	7.76
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	15	15	18.7	170.7				
Bett, Nicholas (KEN) (1990)		time	6.23	9.96	13.70	17.63	21.63		25.83	30.13	34.53	39.16	44.16		49.70	5 / 4			
reaction time	0.168	interval		3.73	3.74	3.93	4.00		4.20	4.30	4.40	4.63	5.00	5.54			11.40	12.50	14.03
		velocity	7.22	9.38	9.36	8.91	8.75		8.33	8.14	7.95	7.56	7.00	7.22	8.05		9.21	8.40	7.48
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	13	15	17	157				
Fredericks, Cornel (RSA) (19		time	6.00	9.76	13.63	17.53	21.56		25.70	30.06	34.53	39.26	44.20		49.96	1 / 5			
reaction time	0.147	interval		3.76	3.87	3.90	4.03		4.14	4.36	4.47	4.73	4.94	5.76			11.53	12.53	14.14
		velocity	7.50	9.31	9.04	8.97	8.68		8.45	8.03	7.83	7.40	7.09	6.94	8.01		9.11	8.38	7.43
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	16	19.5	172.5				
Shoaib, Mohamed (SUD) (19		time	6.03	9.86	13.80	17.70	21.70		25.86	30.16	34.66	39.26	44.16		50.37	2 / 6			
reaction time	0.206	interval		3.83	3.94	3.90	4.00		4.16	4.30	4.50	4.60	4.90	6.21			11.67	12.46	14.00
		velocity	7.46	9.14	8.88	8.97	8.75		8.41	8.14	7.78	7.61	7.14	6.44	7.94		9.00	8.43	7.50
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	14	18	158				
Mucheru, Bonface (KEN) (19		time	6.23	10.16	14.16	18.23	22.40		26.66	31.03	35.50	40.10	44.86		50.61	3 / 7			
reaction time	0.155	interval		3.93	4.00	4.07	4.17		4.26	4.37	4.47	4.60	4.76	5.75			12.00	12.80	13.83
		velocity	7.22	8.91	8.75	8.60	8.39		8.22	8.01	7.83	7.61	7.35	6.96	7.90		8.75	8.20	7.59
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	18.5	175.5				
Whyte, Annsert (JAM) (1987		time	5.86	9.66	13.46	17.36	21.40		25.66	30.00	34.56	39.40	44.66		50.80	7 / 8			
reaction time	0.154	interval		3.80	3.80	3.90	4.04		4.26	4.34	4.56	4.84	5.26	6.14			11.50	12.64	14.66
		velocity	7.68	9.21	9.21	8.97	8.66		8.22	8.06	7.68	7.23	6.65	6.51	7.87		9.13	8.31	7.16
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	16		151				

2017 Shizuoka International Athletics Meeting (Fukuroi, JPN)

A FINAL date 03-May-17

Morioka (2018) - Analysis of the race patterns of the top 400m hurdles in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (		time	5.93	9.65	13.50	17.44	21.51		25.76	30.16	34.73	39.42	44.26		49.93	/ 1			
reaction time		interval		3.72	3.85	3.94	4.07		4.25	4.40	4.57	4.69	4.84	5.67			11.51	12.72	14.10
		velocity	7.59	9.41	9.09	8.88	8.60		8.24	7.95	7.66	7.46	7.23	7.05	8.01		9.12	8.25	7.45
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				

B FINAL date 03-May-17

Morioka (2018) - Analysis of the race patterns of the top 400m hurdles in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	6.04	9.78	13.58	17.45	21.42		25.56	30.01	34.81	39.66	44.56		50.15	/ 1			
reaction time		interval		3.74	3.80	3.87	3.97		4.14	4.45	4.80	4.85	4.90	5.59			11.41	12.56	14.55
		velocity	7.45	9.36	9.21	9.04	8.82		8.45	7.87	7.29	7.22	7.14	7.16	7.98		9.20	8.36	7.22
H1 lead leg		strides		13	13	13	13		13	14	16	15	15		125				

2017 Osaka University Athletics Championships (Osaka, JPN)

FINAL date 05-Apr-17

(2017.04.13) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Obayashi, Masayuki (JPN) (1		time	6.02	9.82	13.79	17.86	22.09		26.46	31.03	35.82	40.69	46.01		51.94	7 / 1			
reaction time		interval		3.80	3.97	4.07	4.23		4.37	4.57	4.79	4.87	5.32	5.93			11.84	13.17	14.98
		velocity	7.48	9.21	8.82	8.60	8.27		8.01	7.66	7.31	7.19	6.58	6.75	7.70		8.87	7.97	7.01
H1 lead leg		strides																	

2017 North-West University Pukke Invitational (Sasolburg, RSA) (TV Analysis)

FINAL date 28-Mar-17

Henson (2020) - Athlete First: 2017 year end hurdle report

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Samba, Abderrahmane (QAT	time	5.92	9.60	13.32	17.12	21.00		25.08	29.40	33.84	38.44	43.00		48.31	5 / 1			
reaction time	interval		3.68	3.72	3.80	3.88		4.08	4.32	4.44	4.60	4.56	5.31	**PB**		11.20	12.28	13.60
	velocity	7.60	9.51	9.41	9.21	9.02		8.58	8.10	7.88	7.61	7.68	7.53	8.28		9.38	8.55	7.72
H1 lead leg R	strides		13	13	13	13		13	13	14	14	14	17.5	137.5				
Shoaib, Mohamed (SUD) (19	time	5.96	9.72	13.52	17.36	21.28		25.40	29.68	34.12	38.76	43.60		49.93	1 / 2			
reaction time	interval		3.76	3.80	3.84	3.92		4.12	4.28	4.44	4.64	4.84	6.33	**NJR PB**		11.40	12.32	13.92
	velocity	7.55	9.31	9.21	9.11	8.93		8.50	8.18	7.88	7.54	7.23	6.32	8.01		9.21	8.52	7.54
H1 lead leg R	strides		13	13	13	13		13	13	13	14	14	18.5	137.5				
Maritz, Hardus (NAM) (1990)	time	6.08	9.96	13.88	17.92	22.12		26.36	30.68	35.12	39.88	44.76		50.38	3 / 3			
reaction time	interval		3.88	3.92	4.04	4.20		4.24	4.32	4.44	4.76	4.88	5.62			11.84	12.76	14.08
	velocity	7.40	9.02	8.93	8.66	8.33		8.25	8.10	7.88	7.35	7.17	7.12	7.94		8.87	8.23	7.46
H1 lead leg R	strides		13	13	13	13		13	13	13	14	14		119				
van Zyl, LJ (RSA) (1985)	time	6.08	10.04	13.96	18.00	22.04		26.24	30.56	35.00	39.64	44.56		50.48	4 / 4			
reaction time	interval		3.96	3.92	4.04	4.04		4.20	4.32	4.44	4.64	4.92	5.92			11.92	12.56	14.00
	velocity	7.40	8.84	8.93	8.66	8.66		8.33	8.10	7.88	7.54	7.11	6.76	7.92		8.81	8.36	7.50
H1 lead leg L	strides	22	14	14	14	14		14	15	15	15	15		152				

2016 Japanese National Youth Championships (Mizuho, JPN)

Heat 2

date 23-Oct-16

(2016.11.17) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nagiko, Kazushi (JPN)	time	6.53	10.87	15.16	19.47	23.86		28.36	32.99	37.95	43.20	48.69		54.86	8 / 1			
reaction time	interval		4.34	4.29	4.31	4.39		4.50	4.63	4.96	5.25	5.49	6.17			12.94	13.52	15.70
	velocity	6.89	8.06	8.16	8.12	7.97		7.78	7.56	7.06	6.67	6.38	6.48	7.29		8.11	7.77	6.69
H1 lead leg	strides																	
Ito, Masahiro (JPN) (1999)	time					23.65				38.41				55.05	7 / 2			
reaction time	interval									14.76								
	velocity					7.82				7.11				7.27				
H1 lead leg	strides																	
Shikota, Ryomi (JPN)	time					23.93				38.96				55.84	3 / 3			
reaction time	interval									15.03								
	velocity					7.73				6.99				7.16				
H1 lead leg	strides																	
Kanbara, Daichi (JPN)	time					23.85				38.93				56.20	5 / 4			
reaction time	interval									15.08								
	velocity					7.76				6.96				7.12				
H1 lead leg	strides																	
Gotoh, Keita (JPN) (1999)	time					24.01				39.19				56.49	4 / 5			
reaction time	interval									15.18								
	velocity					7.71				6.92				7.08				
H1 lead leg	strides																	
Kawaguchi, Takuto (JPN)	time					24.15				39.79				58.08	6 / 6			
reaction time	interval									15.64								
	velocity					7.66				6.71				6.89				
H1 lead leg	strides																	

Heat 1

date 23-Oct-16

(2016.11.17) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Noda, Keisuke (JPN) (1999)	time	6.49	10.65	14.85	19.10	23.43		27.86	32.49	37.47	42.48	47.45		52.99	8 / 1			
reaction time	interval		4.16	4.20	4.25	4.33		4.43	4.63	4.98	5.01	4.97	5.54			12.61	13.39	14.96
	velocity	6.93	8.41	8.33	8.24	8.08		7.90	7.56	7.03	6.99	7.04	7.22	7.55		8.33	7.84	7.02
H1 lead leg	strides																	
Takeda, Kai (JPN)	time					24.21				38.17				55.10	7 / 2			
reaction time	interval									13.96								
	velocity					7.64				7.52				7.26				
H1 lead leg	strides																	
Imaka, Kaito (JPN)	time					24.08				38.27				55.86	6 / 3			
reaction time	interval									14.19								
	velocity					7.68				7.40				7.16				
H1 lead leg	strides																	
Sato, Shoki (JPN)	time					24.74				39.51				56.15	2 / 4			
reaction time	interval									14.77								
	velocity					7.48				7.11				7.12				
H1 lead leg	strides																	

2016 National Sport Festival (Kitakami, JPN)

U19 FINAL

date 08-Oct-16

(2017) - tfdata-store.com/2017/05/14/post-470/

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Inoue, Daichi (JPN) (1999)		time	6.26	10.01	13.94	18.09	22.44	27.02	31.70	36.47	41.21	45.98		51.36	7 / 1			
reaction time		interval		3.75	3.93	4.15	4.35	4.58	4.68	4.77	4.74	4.77	5.38	PB		11.83	13.61	14.28
		velocity	7.19	9.33	8.91	8.43	8.05	7.64	7.48	7.34	7.38	7.34	7.43	7.79		8.88	7.71	7.35
H1 lead leg	R	strides	21	13	13	14	14	15	15	15	15	15	19	169				

2016 Weltklasse (Zürich, SUI) (TV Analysis)

FINAL date 01-Sep-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	5.88	9.56	13.32	17.04	21.04		25.20	29.52	33.96	38.80	43.64		48.72	6 / 1			
reaction time	0.132	interval		3.68	3.76	3.72	4.00		4.16	4.32	4.44	4.84	4.84	5.08			11.16	12.48	14.12
		velocity	7.65	9.51	9.31	9.41	8.75		8.41	8.10	7.88	7.23	7.23	7.87	8.21		9.41	8.41	7.44
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	14	14	16.2	155.2				
Culson, Javier (PUR) (1984)		time	5.72	9.44	13.16	16.96	20.88		25.00	29.24	33.80	38.52	43.32		48.79	3 / 2			
reaction time	0.175	interval		3.72	3.72	3.80	3.92		4.12	4.24	4.56	4.72	4.80	5.47			11.24	12.28	14.08
		velocity	7.87	9.41	9.41	9.21	8.93		8.50	8.25	7.68	7.42	7.29	7.31	8.20		9.34	8.55	7.46
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	14	17	157				
van Zyl, LJ (RSA) (1985)		time	5.88	9.56	13.40	17.40	21.44		25.60	29.84	34.24	38.72	43.40		48.80	1 / 3			
reaction time	0.147	interval		3.68	3.84	4.00	4.04		4.16	4.24	4.40	4.48	4.68	5.40			11.52	12.44	13.56
		velocity	7.65	9.51	9.11	8.75	8.66		8.41	8.25	7.95	7.81	7.48	7.41	8.20		9.11	8.44	7.74
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	15	15	19	171				
Mägi, Rasmus (EST) (1992)		time	6.00	9.76	13.52	17.40	21.40		25.52	29.92	34.44	39.12	43.72		48.90	8 / 4			
reaction time	0.114	interval		3.76	3.76	3.88	4.00		4.12	4.40	4.52	4.68	4.60	5.18			11.40	12.52	13.80
		velocity	7.50	9.31	9.31	9.02	8.75		8.50	7.95	7.74	7.48	7.61	7.72	8.18		9.21	8.39	7.61
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	16	158				
Hussein, Kariem (SUI) (1989)		time	5.76	9.40	13.12	16.96	20.92		25.00	29.32	33.72	38.40	43.32		49.21	7 / 5			
reaction time	0.147	interval		3.64	3.72	3.84	3.96		4.08	4.32	4.40	4.68	4.92	5.89			11.20	12.36	14.00
		velocity	7.81	9.62	9.41	9.11	8.84		8.58	8.10	7.95	7.48	7.11	6.79	8.13		9.38	8.50	7.50
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15	18	161				
Barr, Thomas (IRL) (1992)		time	6.04	9.80	13.68	17.60	21.72		25.84	30.20	34.64	39.28	44.00		49.34	4 / 6			
reaction time	0.174	interval		3.76	3.88	3.92	4.12		4.12	4.36	4.44	4.64	4.72	5.34			11.56	12.60	13.80
		velocity	7.45	9.31	9.02	8.93	8.50		8.50	8.03	7.88	7.54	7.42	7.49	8.11		9.08	8.33	7.61
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Nozawa, Keisuke (JPN) (1991		time	5.88	9.68	13.52	17.44	21.48		25.68	29.96	34.40	39.12	43.96		49.42	2 / 7			
reaction time	0.134	interval		3.80	3.84	3.92	4.04		4.20	4.28	4.44	4.72	4.84	5.46			11.56	12.52	14.00
		velocity	7.65	9.21	9.11	8.93	8.66		8.33	8.18	7.88	7.42	7.23	7.33	8.09		9.08	8.39	7.50
H1 lead leg	L	strides	21	13	13	13	14		14	14	14	15	15	17.2	163.2				
Mucheru, Bonface (KEN) (19		time	6.24												dnf	5 / 8			
reaction time	0.132	interval																	
		velocity	7.21																
H1 lead leg	R	strides	22																

2016 Meeting Paris (Saint-Denis, FRA) (TV Analysis)

FINAL date 27-Aug-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Bett, Nicholas (KEN) (1990)		time	6.04	9.72	13.48	17.32	21.24		25.24	29.28	33.52	37.96	42.72		48.01	7 / 1			
reaction time	0.167	interval		3.68	3.76	3.84	3.92		4.00	4.04	4.24	4.44	4.76	5.29			11.28	11.96	13.44
		velocity	7.45	9.51	9.31	9.11	8.93		8.75	8.66	8.25	7.88	7.35	7.56	8.33		9.31	8.78	7.81
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	13	15	17	157				
Clement, Kerron (USA) (198		time	5.88	9.60	13.32	17.08	21.00		25.08	29.24	33.56	38.04	42.92		48.19	6 / 2			
reaction time	0.137	interval		3.72	3.72	3.76	3.92		4.08	4.16	4.32	4.48	4.88	5.27			11.20	12.16	13.68
		velocity	7.65	9.41	9.41	9.31	8.93		8.58	8.41	8.10	7.81	7.17	7.59	8.30		9.38	8.63	7.68
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	14	16.7	154.7				
Copello, Yasmani (TUR) (198		time	5.88	9.52		17.24	21.24		25.28		33.92	38.40	43.00		48.24	4 / 3			
reaction time	0.186	interval		3.64		7.72	4.00		4.04		8.64	4.48	4.60	5.24			11.36		
		velocity	7.65	9.62		9.07	8.75		8.66		8.10	7.81	7.61	7.63	8.29		9.24		
H1 lead leg	R	strides	20	13			13		13			14	14	17.5	104.5				
Culson, Javier (PUR) (1984)		time	5.76	9.36		16.92	20.84		24.96		33.52	38.12	42.92		48.55	5 / 4			
reaction time	0.207	interval		3.60		7.56	3.92		4.12		8.56	4.60	4.80	5.63			11.16		
		velocity	7.81	9.72		9.26	8.93		8.50		8.18	7.61	7.29	7.10	8.24		9.41		
H1 lead leg	L	strides	20	13			13		13			14	14	17.2	104.2				
Mägi, Rasmus (EST) (1992)		time	6.04	9.80		17.48	21.44		25.52		34.28	38.88	43.44		48.66	3 / 5			
reaction time	0.147	interval		3.76		7.68	3.96		4.08		8.76	4.60	4.56	5.22			11.44		
		velocity	7.45	9.31		9.11	8.84		8.58		7.99	7.61	7.68	7.66	8.22		9.18		
H1 lead leg	L	strides	20	13			13		13			14	14	17	104				
Lahoulou, Abdelmalik (ALG)		time	6.08	9.84	13.60	17.48	21.48		25.60	29.96	34.44	39.08	43.84		48.92	8 / 6			
reaction time	0.191	interval		3.76	3.76	3.88	4.00		4.12	4.36	4.48	4.64	4.76	5.08			11.40	12.48	13.88
		velocity	7.40	9.31	9.31	9.02	8.75		8.50	8.03	7.81	7.54	7.35	7.87	8.18		9.21	8.41	7.56

H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15		144			
Hann, Mamadou Kasse (FRA		time	6.08	9.92		17.76	21.76		25.88		34.60	39.28	44.08		49.46	1 / 7		
reaction time	0.115	interval		3.84		7.84	4.00		4.12		8.72	4.68	4.80	5.38			11.68	
		velocity	7.40	9.11		8.93	8.75		8.50		8.03	7.48	7.29	7.43	8.09		8.99	
H1 lead leg	R	strides	20	13			13		13			14	14		87			

2016 Athletissime (Laussane, SUI) (TV Analysis)

FINAL date 25-Aug-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mägi, Rasmus (EST) (1992)		time	5.86	9.63	13.43	17.30	21.30		25.46	29.80	34.26	38.80	43.36		48.59	4 / 1			
reaction time	0.113	interval		3.77	3.80	3.87	4.00		4.16	4.34	4.46	4.54	4.56	5.23			11.44	12.50	13.56
		velocity	7.68	9.28	9.21	9.04	8.75		8.41	8.06	7.85	7.71	7.68	7.65	8.23		9.18	8.40	7.74
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.2	159.2				
Bett, Nicholas (KEN) (1990)		time	5.90	9.56	13.36	17.30	21.33		25.36	29.50	33.93	38.46	43.20		48.68	6 / 2			
reaction time	0.162	interval		3.66	3.80	3.94	4.03		4.03	4.14	4.43	4.53	4.74	5.48			11.40	12.20	13.70
		velocity	7.63	9.56	9.21	8.88	8.68		8.68	8.45	7.90	7.73	7.38	7.30	8.22		9.21	8.61	7.66
H1 lead leg	R	strides	20	13	13	13	13		13	13	15	15	15	17	160				
Fernández, Sérgio (ESP) (19		time	5.96	9.80	13.73	17.70	21.76		25.93	30.26	34.73	39.26	43.80		49.22	3 / 3			
reaction time	0.146	interval		3.84	3.93	3.97	4.06		4.17	4.33	4.47	4.53	4.54	5.42			11.74	12.56	13.54
		velocity	7.55	9.11	8.91	8.82	8.62		8.39	8.08	7.83	7.73	7.71	7.38	8.13		8.94	8.36	7.75
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	17	158				
Mörö, Oskari (FIN) (1993)		time	6.00	9.83	13.86	17.86	21.96		26.26	30.60	35.06	39.63	44.33		49.81	2 / 4			
reaction time	0.129	interval		3.83	4.03	4.00	4.10		4.30	4.34	4.46	4.57	4.70	5.48			11.86	12.74	13.73
		velocity	7.50	9.14	8.68	8.75	8.54		8.14	8.06	7.85	7.66	7.45	7.30	8.03		8.85	8.24	7.65
H1 lead leg	L	strides	21	14	14	13	13		14	14	15	15	15	18	166				
Cray, Eric Shauwn (PHI) (198		time	5.60	9.36	13.33	17.46	21.76		26.10	30.30	34.73	39.30	44.13		49.88	7 / 5			
reaction time	0.132	interval		3.76	3.97	4.13	4.30		4.34	4.20	4.43	4.57	4.83	5.75			11.86	12.84	13.83
		velocity	8.04	9.31	8.82	8.47	8.14		8.06	8.33	7.90	7.66	7.25	6.96	8.02		8.85	8.18	7.59
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	16		154				
Mfomkpa, Alain-Hervé (SUI)		time	5.96	9.83	13.73	17.73	22.10		26.47	30.93	35.67	40.57			51.58	8 / 6			
reaction time	0.182	interval		3.87	3.90	4.00	4.37		4.37	4.46	4.74	4.90					11.77	13.20	
		velocity	7.55	9.04	8.97	8.75	8.01		8.01	7.85	7.38	7.14			7.75		8.92	7.95	
H1 lead leg	L	strides	21	13	13	13	14		14	15	15	15			133				
Mucheru, Bonface (KEN) (19		time	5.96	9.67	13.46	17.30	21.20		25.26	29.56	34.00	38.50	44.73		68.05	5 / 7			
reaction time	0.153	interval		3.71	3.79	3.84	3.90		4.06	4.30	4.44	4.50	6.23	23.32			11.34	12.26	15.17
		velocity	7.55	9.43	9.23	9.11	8.97		8.62	8.14	7.88	7.78	5.62	1.72	5.88		9.26	8.56	6.92
H1 lead leg	R	strides	22	13	13	13	13		13	15	15	15	17		149				

2016 Olympic Games (Rio de Janeiro, BRA)

FINAL date 18-Aug-16

Zhou (2020) - analysis of competetive performance charactersitics of outstanding men's 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	5.6	9.2	12.8	16.6	20.5		24.4	28.7	32.9	37.4	41.9		47.73	5 / 1			
reaction time	0.227	interval		3.60	3.60	3.80	3.90		3.90	4.30	4.20	4.50	4.50	5.83			11.00	12.10	13.20
		velocity	8.04	9.72	9.72	9.21	8.97		8.97	8.14	8.33	7.78	7.78	6.86	8.38		9.55	8.68	7.95
H1 lead leg		strides	21	13	13	13	13		14	15	15	15	15	18	165				
Mucheru, Bonface (KEN) (19	0.165	no information available												**NR PB**	47.78	7 / 2			
Copello, Yasmani (TUR) (198	0.186	no information available												**NR PB**	47.92	2 / 3			
Barr, Thomas (IRL) (1992)	0.191	no information available												**NR PB**	47.94	4 / 4			
Whyte, Annsert (JAM) (1987	0.167	no information available												**PB**	48.07	6 / 5			
Mägi, Rasmus (EST) (1992)	0.182	no information available												**NR PB**	48.40	1 / 6			
Koech, Haron (KEN) (1990)	0.159	no information available													49.09	8 / 7			

2016 Japanese National High School Championships (Okayama, JPN)

FINAL date 31-Jul-16

Kota (2016) - 69th high school championships: JAF scientific committee - biomechanics data collection

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shirao, Yusuke (JPN) (1999)		time	6.31	10.28	14.45	18.77	23.21		27.71	32.23	36.79	41.42	46.11		51.40	7 / 1			
reaction time	0.192	interval		3.97	4.17	4.32	4.44		4.50	4.52	4.56	4.63	4.69	5.29			12.46	13.46	13.88
		velocity	7.13	8.82	8.39	8.10	7.88		7.78	7.74	7.68	7.56	7.46	7.56	7.78		8.43	7.80	7.56
H1 lead leg		strides		13	13	14	14		15	15	15	15	15		129				
Arisaka, Tomotaka (JPN) (19		time	6.21	10.23	14.48	18.85	23.17		27.71	32.33	37.07	41.81	46.48		51.81	2 / 2			
reaction time	0.147	interval		4.02	4.25	4.37	4.32		4.54	4.62	4.74	4.74	4.67	5.33			12.64	13.48	14.15
		velocity	7.25	8.71	8.24	8.01	8.10		7.71	7.58	7.38	7.38	7.49	7.50	7.72		8.31	7.79	7.42
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Michishita, Koya (JPN) (1998		time	6.31	10.56	14.80	19.22	23.69		28.28	32.97	37.65	42.43	47.26		52.60	5 / 3			
reaction time	0.168	interval		4.25	4.24	4.42	4.47		4.59	4.69	4.68	4.78	4.83	5.34			12.91	13.75	14.29
		velocity	7.13	8.24	8.25	7.92	7.83		7.63	7.46	7.48	7.32	7.25	7.49	7.60		8.13	7.64	7.35
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Muratomi, Kotaro (JPN) (19		time	6.17	10.23	14.40	18.70	23.09		27.58	32.33	37.09	41.92	46.93		52.68	4 / 4			

reaction time	0.178	interval		4.06	4.17	4.30	4.39	4.49	4.75	4.76	4.83	5.01	5.75			12.53	13.63	14.60
		velocity	7.29	8.62	8.39	8.14	7.97	7.80	7.37	7.35	7.25	6.99	6.96	7.59		8.38	7.70	7.19
H1 lead leg		strides		14	14	14	14	14	15	15	15	15		130				
Nataura, Yusuke (JPN)		time	6.27	10.41	14.73	19.17	23.62	28.06	32.53	37.12	41.83	46.88		52.93	8 / 5			
reaction time	0.151	interval		4.14	4.32	4.44	4.45	4.44	4.47	4.59	4.71	5.05	6.05			12.90	13.36	14.35
		velocity	7.18	8.45	8.10	7.88	7.87	7.88	7.83	7.63	7.43	6.93	6.61	7.56		8.14	7.86	7.32
H1 lead leg		strides		15	15	15	15	15	15	15	15	16		136				
Sato, Shunma (JPN) (1998)		time	6.47	10.58	14.90	19.25	23.79	28.29	32.88	37.69	42.66	47.71		53.19	9 / 6			
reaction time	0.197	interval		4.11	4.32	4.35	4.54	4.50	4.59	4.81	4.97	5.05	5.48			12.78	13.63	14.83
		velocity	6.96	8.52	8.10	8.05	7.71	7.78	7.63	7.28	7.04	6.93	7.30	7.52		8.22	7.70	7.08
H1 lead leg		strides		14	15	15	16	15	15	15	16	16		137				
Honma, Ryota (JPN)		time	6.47	10.63	14.90	19.24	23.62	28.23	32.86	37.89	42.98	47.98		53.23	3 / 7			
reaction time	0.167	interval		4.16	4.27	4.34	4.38	4.61	4.63	5.03	5.09	5.00	5.25			12.77	13.62	15.12
		velocity	6.96	8.41	8.20	8.06	7.99	7.59	7.56	6.96	6.88	7.00	7.62	7.51		8.22	7.71	6.94
H1 lead leg		strides		15	15	15	15	15	15	17	17	17		141				
Miyoshi, Ren (JPN) (1998)		time	6.33	10.36	14.48	18.72	23.11	27.63	32.33	37.30	42.39	47.60		53.42	6 / 8			
reaction time	0.200	interval		4.03	4.12	4.24	4.39	4.52	4.70	4.97	5.09	5.21	5.82			12.39	13.61	15.27
		velocity	7.11	8.68	8.50	8.25	7.97	7.74	7.45	7.04	6.88	6.72	6.87	7.49		8.47	7.71	6.88
H1 lead leg		strides		15	15	15	15	15	15	17	17	17		141				

2016 Japanese National Championships (Nagoya, JPN)

FINAL date 24-Jun-16

Morioka (2016) - race pattern of top 400m hurdlers in japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nozawa, Keisuke (JPN) (1991		time	5.98	9.63	13.43	17.30	21.27		25.47	29.71	34.16	38.73	43.57		49.14	5 / 1			
reaction time	0.174	interval		3.65	3.80	3.87	3.97		4.20	4.24	4.45	4.57	4.84	5.57			11.32	12.41	13.86
		velocity	7.53	9.59	9.21	9.04	8.82		8.33	8.25	7.87	7.66	7.23	7.18	8.14		9.28	8.46	7.58
H1 lead leg		strides		13	13	13	14		14	14	14	15	15		125				
Matsushita, Yuki (JPN) (1991		time	6.09	9.93	13.80	17.72	21.74		25.93	30.25	34.75	39.32	43.96		49.31	6 / 2			
reaction time	0.169	interval		3.84	3.87	3.92	4.02		4.19	4.32	4.50	4.57	4.64	5.35			11.63	12.53	13.71
		velocity	7.39	9.11	9.04	8.93	8.71		8.35	8.10	7.78	7.66	7.54	7.48	8.11		9.03	8.38	7.66
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Konishi, Yuta (JPN) (1990)		time	6.08	9.90	13.77	17.67	21.62		25.84	30.09	34.56	39.16	43.98		49.55	4 / 3			
reaction time	0.165	interval		3.82	3.87	3.90	3.95		4.22	4.25	4.47	4.60	4.82	5.57			11.59	12.42	13.89
		velocity	7.40	9.16	9.04	8.97	8.86		8.29	8.24	7.83	7.61	7.26	7.18	8.07		9.06	8.45	7.56
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				

2016 London Anniversary Games (London, GBR) (TV Analysis

FINAL date 23-Jul-16

Henson (2020) - Athlete First: 2016 year end hurdle report

				H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198			time	5.92	9.68	13.44	17.28	21.36		25.64	29.96	34.36	38.76	43.28		48.40	7 / 1			
reaction time	0.164		interval		3.76	3.76	3.84	4.08		4.28	4.32	4.40	4.40	4.52	5.12			11.36	12.68	13.32
			velocity	7.60	9.31	9.31	9.11	8.58		8.18	8.10	7.95	7.95	7.74	7.81	8.26		9.24	8.28	7.88
H1 lead leg		R	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Culson, Javier (PUR) (1984)			time	5.80	9.48	13.20	17.08	21.08		25.24	29.56	33.88	38.40	43.08		48.63	3 / 2			
reaction time	0.173		interval		3.68	3.72	3.88	4.00		4.16	4.32	4.32	4.52	4.68	5.55			11.28	12.48	13.52
			velocity	7.76	9.51	9.41	9.02	8.75		8.41	8.10	8.10	7.74	7.48	7.21	8.23		9.31	8.41	7.77
H1 lead leg		L	strides	20	13	13	13	13		13	13	13	14	14	17	156				
Copello, Yasmani (TUR) (198			time	5.84	9.56	13.40	17.28	21.28		25.48	29.80	34.24	38.80	43.36		48.70	6 / 3			
reaction time	0.189		interval		3.72	3.84	3.88	4.00		4.20	4.32	4.44	4.56	4.56	5.34			11.44	12.52	13.56
			velocity	7.71	9.41	9.11	9.02	8.75		8.33	8.10	7.88	7.68	7.68	7.49	8.21		9.18	8.39	7.74
H1 lead leg		R	strides	20	13	13	13	13		13	14	14	14	14	17.2	158.2				
van Zyl, LJ (RSA) (1985)			time	5.88	9.60	13.36	17.28	21.36		25.60	29.92	34.28	38.76	43.40		48.92	2 / 4			
reaction time	0.153		interval		3.72	3.76	3.92	4.08		4.24	4.32	4.36	4.48	4.64	5.52			11.40	12.64	13.48
			velocity	7.65	9.41	9.31	8.93	8.58		8.25	8.10	8.03	7.81	7.54	7.25	8.18		9.21	8.31	7.79
H1 lead leg		L	strides	22	14	14	14	14		14	15	15	15	15	19	171				
Green, Jack (GBR) (1991)			time	6.12	10.00	13.84	17.80	21.92		26.12	30.40	34.72	39.20	43.76		48.99	9 / 5			
reaction time	0.187		interval		3.88	3.84	3.96	4.12		4.20	4.28	4.32	4.48	4.56	5.23			11.68	12.60	13.36
			velocity	7.35	9.02	9.11	8.84	8.50		8.33	8.18	8.10	7.81	7.68	7.65	8.16		8.99	8.33	7.86
H1 lead leg		R	strides	22	14	13	13	14		14	15	15	15	15	18.7	168.7				
Rodger, Sebastian (GBR) (1			time	6.16	10.04	13.92	17.96	22.08		26.28	30.60	35.04	39.52	44.04		49.35	8 / 6			
reaction time	0.155		interval		3.88	3.88	4.04	4.12		4.20	4.32	4.44	4.48	4.52	5.31			11.80	12.64	13.44
			velocity	7.31	9.02	9.02	8.66	8.50		8.33	8.10	7.88	7.81	7.74	7.53	8.11		8.90	8.31	7.81
H1 lead leg		R	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Dutch, Johnny (USA) (1989)			time	5.84	9.60	13.56	17.60	21.80		26.08	30.40	34.80	39.24	43.92		49.60	5 / 7			
reaction time	0.193		interval		3.76	3.96	4.04	4.20		4.28	4.32	4.40	4.44	4.68	5.68			11.76	12.80	13.52
			velocity	7.71	9.31	8.84	8.66	8.33		8.18	8.10	7.95	7.88	7.48	7.04	8.06		8.93	8.20	7.77
H1 lead leg		R	strides	22	13	13	13	13		14	14	15	15	15	18.5	165.5				

Tinsley, Michael (USA) (1984		time	5.80	9.60	13.28	17.16	21.32	25.68	30.12	34.60	39.32	44.28		50.72	4 / 8			
reaction time	0.188	interval		3.80	3.68	3.88	4.16	4.36	4.44	4.48	4.72	4.96	6.44			11.36	12.96	14.16
		velocity	7.76	9.21	9.51	9.02	8.41	8.03	7.88	7.81	7.42	7.06	6.21	7.89		9.24	8.10	7.42
H1 lead leg	L	strides	21	13	13	13	14	14	14	14	14	15		145				
Paul, Jacob (GBR) (1995)		time	6.04	9.84	13.76	17.76	21.92	26.24	30.68	35.36	40.16	45.12		50.84	1 / 9			
reaction time	0.136	interval		3.80	3.92	4.00	4.16	4.32	4.44	4.68	4.80	4.96	5.72			11.72	12.92	14.44
		velocity	7.45	9.21	8.93	8.75	8.41	8.10	7.88	7.48	7.29	7.06	6.99	7.87		8.96	8.13	7.27
H1 lead leg	L	strides	21	13	13	13	13	14	14	15	15	15		146				

2016 USA Olympic Trials (Eugene, OR) (TV Analysis)

FINAL date 10-Jul-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	6.00	9.71	13.34	17.18	21.15		25.26	29.53	33.93	38.50	43.24		48.50	7 / 1			
reaction time	0.180	interval		3.71	3.63	3.84	3.97		4.11	4.27	4.40	4.57	4.74	5.26			11.18	12.35	13.71
		velocity	7.50	9.43	9.64	9.11	8.82		8.52	8.20	7.95	7.66	7.38	7.60	8.25		9.39	8.50	7.66
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16.5	153.5				
Robinson, Byron (USA) (19		time	5.90	9.67	13.68	17.75	21.75		25.79	30.00	34.33	38.84	43.44		48.79	2 / 2			
reaction time	0.185	interval		3.77	4.01	4.07	4.00		4.04	4.21	4.33	4.51	4.60	5.35	**PB**		11.85	12.25	13.44
		velocity	7.63	9.28	8.73	8.60	8.75		8.66	8.31	8.08	7.76	7.61	7.48	8.20		8.86	8.57	7.81
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19.2	176.2				
Tinsley, Michael (USA) (1984		time	5.84	9.47	13.18	16.98	20.99		25.12	29.36	33.77	38.40	43.28		48.82	6 / 3			
reaction time	0.180	interval		3.63	3.71	3.80	4.01		4.13	4.24	4.41	4.63	4.88	5.54			11.14	12.38	13.92
		velocity	7.71	9.64	9.43	9.21	8.73		8.47	8.25	7.94	7.56	7.17	7.22	8.19		9.43	8.48	7.54
H1 lead leg	L	strides	21	13	13	13	14		14	14	14	15	16	18.7	165.7				
Babineaux, Ricky (USA) (199		time	6.00	9.84	13.68	17.62	21.59		25.66	30.03	34.53	39.10	43.74		48.88	4 / 4			
reaction time	0.187	interval		3.84	3.84	3.94	3.97		4.07	4.37	4.50	4.57	4.64	5.14	**PB**		11.62	12.41	13.71
		velocity	7.50	9.11	9.11	8.88	8.82		8.60	8.01	7.78	7.66	7.54	7.78	8.18		9.04	8.46	7.66
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	17.5	158.5				
Dutch, Johnny (USA) (1989)		time	5.90	9.51	13.24	17.08	20.99		24.99	29.13	33.47	38.04	42.87		48.92	5 / 5			
reaction time	0.227	interval		3.61	3.73	3.84	3.91		4.00	4.14	4.34	4.57	4.83	6.05			11.18	12.05	13.74
		velocity	7.63	9.70	9.38	9.11	8.95		8.75	8.45	8.06	7.66	7.25	6.61	8.18		9.39	8.71	7.64
H1 lead leg	R	strides	22	13	13	13	13		14	14	15	15	15	19.7	166.7				
Anderson, Jeshua (USA) (19		time	6.00	9.67	13.45	17.35	21.39		25.49	29.73	34.13	38.74	43.58		49.42	8 / ~~6~~			
reaction time	0.191	interval		3.67	3.78	3.90	4.04		4.10	4.24	4.40	4.61	4.84	5.84	**DQ**		11.35	12.38	13.85
		velocity	7.50	9.54	9.26	8.97	8.66		8.54	8.25	7.95	7.59	7.23	6.85	8.09		9.25	8.48	7.58
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17	156				
Downing, Quincy (USA) (19		time	5.97	9.74	13.61	17.42	21.39		25.49	29.86	34.33	39.10	43.91		49.60	3 / ~~7~~ 6			
reaction time	0.196	interval		3.77	3.87	3.81	3.97		4.10	4.37	4.47	4.77	4.81	5.69			11.45	12.44	14.05
		velocity	7.54	9.28	9.04	9.19	8.82		8.54	8.01	7.83	7.34	7.28	7.03	8.06		9.17	8.44	7.47
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Jackson, Bershawn (USA) (1		time	5.90	9.68	13.61	17.68	21.82		25.86	30.00	34.30	39.07	43.98		49.96	1 / ~~8~~ 7			
reaction time	0.233	interval		3.78	3.93	4.07	4.14		4.04	4.14	4.30	4.77	4.91	5.98			11.78	12.32	13.98
		velocity	7.63	9.26	8.91	8.60	8.45		8.66	8.45	8.14	7.34	7.13	6.69	8.01		8.91	8.52	7.51
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	16	16	19.5	178.5				

2016 European Championships (Amsterdam, NED) (TV Analysis)

FINAL date 08-Jul-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Copello, Yasmani (TUR) (198		time	5.88	9.56	13.44	17.44	21.48		25.60	29.80	34.24	39.80	43.52		48.98	6 / 1			
reaction time	0.175	interval		3.68	3.88	4.00	4.04		4.12	4.20	4.44	5.56	3.72	5.46			11.56	12.36	13.72
		velocity	7.65	9.51	9.02	8.75	8.66		8.50	8.33	7.88	6.29	9.41	7.33	8.17		9.08	8.50	7.65
H1 lead leg	R	strides	20	13	13	13	13		13		14	14	14	18	145				
Fernández, Sérgio (ESP) (19		time	6.04	9.88	13.84	17.96	22.04		26.16	30.28	34.68	39.20	43.84		49.06	5 / 2			
reaction time	0.138	interval		3.84	3.96	4.12	4.08		4.12	4.12	4.40	4.52	4.64	5.22			11.92	12.32	13.56
		velocity	7.45	9.11	8.84	8.50	8.58		8.50	8.50	7.95	7.74	7.54	7.66	8.15		8.81	8.52	7.74
H1 lead leg	L	strides	20	13	13	13	13		13		14	14	14	17.5	144.5				
Hussein, Kariem (SUI) (1989)		time	5.88	9.64	13.52	17.60	21.72		25.88	29.92	34.36	38.92	43.68		49.10	3 / 3			
reaction time	0.134	interval		3.76	3.88	4.08	4.12		4.16	4.04	4.44	4.56	4.76	5.42			11.72	12.32	13.76
		velocity	7.65	9.31	9.02	8.58	8.50		8.41	8.66	7.88	7.68	7.35	7.38	8.15		8.96	8.52	7.63
H1 lead leg	L	strides	20	13	13	13	13		14	14	14	15	15	18	162				
Mörö, Oskari (FIN) (1993)		time	6.04	9.84	13.68	17.64	21.68		25.92	30.16	34.60	39.24	43.92		49.24	7 / 4			
reaction time	0.155	interval		3.80	3.84	3.96	4.04		4.24	4.24	4.44	4.64	4.68	5.32			11.60	12.52	13.76
		velocity	7.45	9.21	9.11	8.84	8.66		8.25	8.25	7.88	7.54	7.48	7.52	8.12		9.05	8.39	7.63
H1 lead leg	L	strides	21	14	14	13	13		14		15	15	15	18.2	152.2				
Williams, Rhys (GBR) (1984)		time	6.00	9.68	13.56	17.64	21.72		25.88	30.16	34.64	39.32	44.20		49.63	8 / 5			
reaction time	0.141	interval		3.68	3.88	4.08	4.08		4.16	4.28	4.48	4.68	4.88	5.43			11.64	12.52	14.04

		velocity	7.50	9.51	9.02	8.58	8.58	8.41	8.18	7.81	7.48	7.17	7.37	8.06		9.02	8.39	7.48
H1 lead leg	R	strides	22	14	14	14	14	14		15	15	15	19	156				
Warholm, Karsten (NOR) (19		time	5.88	9.52	13.36	17.36	21.40	25.60	29.76	34.16	39.04	44.08		49.82	4 / 6			
reaction time	0.153	interval		3.64	3.84	4.00	4.04	4.20	4.16	4.40	4.88	5.04	5.74			11.48	12.40	14.32
		velocity	7.65	9.62	9.11	8.75	8.66	8.33	8.41	7.95	7.17	6.94	6.97	8.03		9.15	8.47	7.33
H1 lead leg	L	strides	20	13	13	13	13	13		13	14	15	18	145				
Kučera, Martin (SVK) (1990)		time	6.08	9.96	13.92	18.08	22.20		30.60	35.00	39.64	44.52		49.82	1 / 7			
reaction time	0.121	interval		3.88	3.96	4.16	4.12		8.40	4.40	4.64	4.88	5.30			12.00	12.52	13.92
		velocity	7.40	9.02	8.84	8.41	8.50		8.33	7.95	7.54	7.17	7.55	8.03		8.75	8.39	7.54
H1 lead leg	R	strides	20	13		13	13			13	14	14	16.7	116.7				
Green, Jack (GBR) (1991)		time	6.08	10.00	13.96	18.12	22.24							dnf	2 / --			
reaction time	0.187	interval		3.92	3.96	4.16	4.12									12.04		
		velocity	7.40	8.93	8.84	8.41	8.50									8.72		
H1 lead leg	L	strides	22	14		14	14							64				

Heat 2

date 07-Jul-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Copello, Yasmani (TUR) (19		time	5.84	9.48	13.28	17.28	21.20		25.08	29.28	33.64	38.16	42.80		48.42	5 / 1			
reaction time	0.173	interval		3.64	3.80	4.00	3.92		3.88	4.20	4.36	4.52	4.64	5.62	NR PB		11.44	12.00	13.52
		velocity	7.71	9.62	9.21	8.75	8.93		9.02	8.33	8.03	7.74	7.54	7.12	8.26		9.18	8.75	7.77
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	14	18	159				

2016 Bauhaus Athletics (Stockholm, SWE) (TV Analysis)

FINAL

date 16-Jun-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Culson, Javier (PUR) (1984)		time	5.80	9.53	13.20	17.07	21.16		25.43	29.77	34.17	38.83	43.70		49.43	5 / 1			
reaction time	0.184	interval		3.73	3.67	3.87	4.09		4.27	4.34	4.40	4.66	4.87	5.73			11.27	12.70	13.93
		velocity	7.76	9.38	9.54	9.04	8.56		8.20	8.06	7.95	7.51	7.19	6.98	8.09		9.32	8.27	7.54
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17.2	156.2				
Clement, Kerron (USA) (198		time	5.97	9.73	13.53	17.37	21.47		25.73	30.17	34.70	39.37	44.37		49.87	6 / 2			
reaction time	0.150	interval		3.76	3.80	3.84	4.10		4.26	4.44	4.53	4.67	5.00	5.50			11.40	12.80	14.20
		velocity	7.54	9.31	9.21	9.11	8.54		8.22	7.88	7.73	7.49	7.00	7.27	8.02		9.21	8.20	7.39
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	14	17.2	155.2				
Dobek, Patryk (POL) (1994)		time	5.97	9.73	13.53	17.37	21.37		25.63	30.03	34.60	39.30	44.23		49.89	7 / 3			
reaction time	0.163	interval		3.76	3.80	3.84	4.00		4.26	4.40	4.57	4.70	4.93	5.66			11.40	12.66	14.20
		velocity	7.54	9.31	9.21	9.11	8.75		8.22	7.95	7.66	7.45	7.10	7.07	8.02		9.21	8.29	7.39
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	15	18	160				
van Zyl, LJ (RSA) (1985)		time	5.93	9.77		17.63	21.77		26.07	30.33	34.70	39.37	44.23		50.21	3 / 4			
reaction time	0.159	interval		3.84		7.86	4.14		4.30	4.26	4.37	4.67	4.86	5.98			11.70	12.70	13.90
		velocity	7.59	9.11		8.91	8.45		8.14	8.22	8.01	7.49	7.20	6.69	7.97		8.97	8.27	7.55
H1 lead leg	L	strides	22	14			14		14	15	15	15	15	20	144				
Bett, Nicholas (KEN) (1990)		time	6.20	9.93		17.73	21.87		26.07	30.43	34.87	39.67	44.93		51.14	2 / 5			
reaction time	0.159	interval		3.73		7.80	4.14		4.20	4.36	4.44	4.80	5.26	6.21			11.53	12.70	14.50
		velocity	7.26	9.38		8.97	8.45		8.33	8.03	7.88	7.29	6.65	6.44	7.82		9.11	8.27	7.24
H1 lead leg	R	strides	21	13			13		13	13		15	15	17.5	120.5				

2016 Racers Grand Prix (Kingston, JAM) (TV Analysis)

FINAL

date 11-Jun-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Dutch, Johnny (USA) (1989)		time	5.67	9.33	13.13	17.03	21.10		25.27	29.43	33.77	38.17	42.70		48.10	5 / 1			
reaction time		interval		3.66	3.80	3.90	4.07		4.17	4.16	4.34	4.40	4.53	5.40			11.36	12.40	13.27
		velocity	7.94	9.56	9.21	8.97	8.60		8.39	8.41	8.06	7.95	7.73	7.41	8.32		9.24	8.47	7.91
H1 lead leg	R	strides	22	13	13	13	13		14	14	15	15	15	18.2	165.2				
Cato, Roxroy (JAM) (1988)		time	5.73	9.57		17.60	21.93		26.23	30.47	34.72	39.07			48.98	7 / 2			
reaction time		interval		3.84		8.03	4.33		4.30	4.24	4.25	4.35					11.87	12.87	
		velocity	7.85	9.11		8.72	8.08		8.14	8.25	8.24	8.05			8.17		8.85	8.16	
H1 lead leg	L	strides	22	14			14		15	15	15	15			110				

2016 Bislett Games (Oslo, NOR) (TV Analysis)

FINAL

date 09-Jun-16

Henson (2021) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Copello, Yasmani (TUR) (19		time	5.88	9.56	13.40	17.26	21.48		25.64	30.04	34.40	38.88	43.44		48.79	1 / 1			
reaction time	0.164	interval		3.68	3.84	3.86	4.22		4.16	4.40	4.36	4.48	4.56	5.35			11.38	12.78	13.40
		velocity	7.65	9.51	9.11	9.07	8.29		8.41	7.95	8.03	7.81	7.68	7.48	8.20		9.23	8.22	7.84
H1 lead leg	R	strides	20	13		13	13		13	14	14	14	14	17.7	145.7				
Culson, Javier (PUR) (1984)		time	5.76	9.40	13.08	17.00	21.04		25.28	29.48	33.84	38.36	43.24		48.99	8 / 2			
reaction time	0.175	interval		3.64	3.68	3.92	4.04		4.24	4.20	4.36	4.52	4.88	5.75			11.24	12.48	13.76
		velocity	7.81	9.62	9.51	8.93	8.66		8.25	8.33	8.03	7.74	7.17	6.96	8.16		9.34	8.41	7.63
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17.5	156.5				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Tinsley, Michael (USA) (1984		time	5.84	9.52	13.28	17.20	21.32	25.64	29.96	34.40	38.92	43.60		49.02	5 / 3			
reaction time	0.121	interval		3.68	3.76	3.92	4.12	4.32	4.32	4.44	4.52	4.68	5.42			11.36	12.76	13.64
		velocity	7.71	9.51	9.31	8.93	8.50	8.10	8.10	7.88	7.74	7.48	7.38	8.16		9.24	8.23	7.70
H1 lead leg	L	strides	21	13	13	13	14	14	14	14	15	15	18	164				
Clement, Kerron (USA) (198		time	5.96	9.72	13.56	17.48	21.68	25.92	30.28	34.72	39.28	44.08		49.61	6 / 4			
reaction time	0.194	interval		3.76	3.84	3.92	4.20	4.24	4.36	4.44	4.56	4.80	5.53			11.52	12.80	13.80
		velocity	7.55	9.31	9.11	8.93	8.33	8.25	8.03	7.88	7.68	7.29	7.23	8.06		9.11	8.20	7.61
H1 lead leg	R	strides	20	13	13	13	13	13	13	13	13	13	16.5	153.5				
Warholm, Karsten (NOR) (19		time	5.92	9.72	13.64	17.60	21.80	26.00	30.36	34.96	39.76	44.60		49.80	7 / 5			
reaction time	0.163	interval		3.80	3.92	3.96	4.20	4.20	4.36	4.60	4.80	4.84	5.20			11.68	12.76	14.24
		velocity	7.60	9.21	8.93	8.84	8.33	8.33	8.03	7.61	7.29	7.23	7.69	8.03		8.99	8.23	7.37
H1 lead leg	L	strides	20	13	13	13	13	13	13	15	15	15		143				
Bett, Nicholas (KEN) (1990)		time	6.08	9.72	13.48	17.40	21.52	25.72	30.00	34.44	39.04	44.00		49.85	4 / 6			
reaction time	0.177	interval		3.64	3.76	3.92	4.12	4.20	4.28	4.44	4.60	4.96	5.85			11.32	12.60	14.00
		velocity	7.40	9.62	9.31	8.93	8.50	8.33	8.18	7.88	7.61	7.06	6.84	8.02		9.28	8.33	7.50
H1 lead leg	R	strides	21	13		13	13	13	13	13	15	15	17.2	146.2				
Dobek, Patryk (POL) (1994)		time	6.00	9.80	13.64	17.56	21.76	26.00	30.48	35.00	39.68	44.52		50.27	3 / 7			
reaction time	0.174	interval		3.80	3.84	3.92	4.20	4.24	4.48	4.52	4.68	4.84	5.75			11.56	12.92	14.04
		velocity	7.50	9.21	9.11	8.93	8.33	8.25	7.81	7.74	7.48	7.23	6.96	7.96		9.08	8.13	7.48
H1 lead leg	L	strides	20	13		13	13	13	14	14	14	14	17.2	145.2				
Kjerpeset, Øyrind Strømmen		time	6.08	9.92	13.84	17.92	22.24	26.56	31.00	35.48	40.24	45.16		50.98	2 / 8			
reaction time	0.153	interval		3.84	3.92	4.08	4.32	4.32	4.44	4.48	4.76	4.92	5.82			11.84	13.08	14.16
		velocity	7.40	9.11	8.93	8.58	8.10	8.10	7.88	7.81	7.35	7.11	6.87	7.85		8.87	8.03	7.42
H1 lead leg	L	strides	21	13		13	13	14	14	14	14	15		131				

2016 Prefontaine Classic (Eugene, OR) (TV Analysis)

FINAL date 28-May-16 *(H8 5m short)* *Henson (2020) - Athlete First: 2016 year end hurdle report*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tinsley, Michael (USA) (1984		time	5.92	9.56	13.44	17.44	21.64		25.88	30.12	33.88	39.00	43.60		48.74	3 / 1			
reaction time		interval		3.64	3.88	4.00	4.20		4.24	4.24	3.76	5.12	4.60	5.14			11.52	12.68	13.48
		velocity	7.60	9.62	9.02	8.75	8.33		8.25	8.25	7.98	7.81	7.61	7.78	8.21		9.11	8.28	7.79
H1 lead leg	L	strides	21	13	13	13	14		14			17	15	18	138				
Clement, Kerron (USA) (198		time	6.08	9.92	13.72	17.72			26.00	30.28	34.04	39.08	43.68		48.87	7 / 2			
reaction time		interval		3.84	3.80	4.00			8.28	4.28	3.76	5.04	4.60	5.19			11.64	12.56	13.40
		velocity	7.40	9.11	9.21	8.75			8.45	8.18	7.98	7.94	7.61	7.71	8.18		9.02	8.36	7.84
H1 lead leg	R	strides	20	13	13	13				13	13		15	17	117				
Jackson, Bershawn (USA) (1		time	5.76	9.60	13.72	17.96	22.24		26.40	30.48	34.24	39.16	43.72		49.04	4 / 3			
reaction time		interval		3.84	4.12	4.24	4.28		4.16	4.08	3.76	4.92	4.56	5.32			12.20	12.52	13.24
		velocity	7.81	9.11	8.50	8.25	8.18		8.41	8.58	7.98	8.13	7.68	7.52	8.16		8.61	8.39	7.93
H1 lead leg	L	strides	22	15	15	15	15		15			17	15	19	148				
Gibson, Jeffery (BAH) (1990)		time	6.04	9.88	13.80	17.76			26.16	30.44	34.32	39.48	44.00		49.16	6 / 4			
reaction time		interval		3.84	3.92	3.96			8.40	4.28	3.88	5.16	4.52	5.16			11.72	12.68	13.56
		velocity	7.45	9.11	8.93	8.84			8.33	8.18	7.73	7.75	7.74	7.75	8.14		8.96	8.28	7.74
H1 lead leg	R	strides	20	13	13	13				13	11	16	14	17	130				
Copello, Yasmani (TUR) (19		time	6.00	9.84	13.72	17.76			26.16	30.40	34.32	39.52	44.20		49.43	1 / 5			
reaction time		interval		3.84	3.88	4.04			8.40	4.24	3.92	5.20	4.68	5.23			11.76	12.64	13.80
		velocity	7.50	9.11	9.02	8.66			8.33	8.25	7.65	7.69	7.48	7.65	8.09		8.93	8.31	7.61
H1 lead leg	R	strides	20	13	13	13				13	12	16	14	17.5	131.5				
Hussein, Kariem (SUI) (1989)		time	6.00	9.80	13.72	17.72			26.04	30.20	34.08	39.32	44.08		49.47	8 / 6			
reaction time		interval		3.80	3.92	4.00			8.32	4.16	3.88	5.24	4.76	5.39			11.72	12.48	13.88
		velocity	7.50	9.21	8.93	8.75			8.41	8.41	7.73	7.63	7.35	7.42	8.09		8.96	8.41	7.56
H1 lead leg	L	strides	20	13	13	13				13	13		15	17.7	117.7				
Culson, Javier (PUR) (1984)		time	5.88	9.60	13.40	17.40	21.56		25.80	30.16	33.96	39.28	44.08		49.51	2 / 7			
reaction time		interval		3.72	3.80	4.00	4.16		4.24	4.36	3.80	5.32	4.80	5.43			11.52	12.76	13.92
		velocity	7.65	9.41	9.21	8.75	8.41		8.25	8.03	7.89	7.52	7.29	7.37	8.08		9.11	8.23	7.54
H1 lead leg	L	strides	20	13	13	13	13		13		11	16	14	17	143				
Bett, Nicholas (KEN) (1990)		time	6.24	10.04	13.88	17.96	22.20		26.52	31.00	35.08	40.48	45.44		51.33	5 / 8			
reaction time		interval		3.80	3.84	4.08	4.24		4.32	4.48	4.08	5.40	4.96	5.89			11.72	13.04	14.44
		velocity	7.21	9.21	9.11	8.58	8.25		8.10	7.81	7.35	7.41	7.06	6.79	7.79		8.96	8.05	7.27
H1 lead leg	R	strides	21	13	13	13	13		13		13	17	15		131				

2016 Kansai Business Championships (Osaka, JPN)

FINAL date 20-May-16 *(2017) - tfdata-store.com/2017/05/22/post-605/*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Konishi, Yuta (JPN) (1990)		time	6.12	10.01	13.90	17.83	21.95		26.32	30.64	35.10	39.72	44.44		49.76	5 / 1			
reaction time		interval		3.89	3.89	3.93	4.12		4.37	4.32	4.46	4.62	4.72	5.32			11.71	12.81	13.80
		velocity	7.35	9.00	9.00	8.91	8.50		8.01	8.10	7.85	7.58	7.42	7.52	8.04		8.97	8.20	7.61

H1 lead leg		strides		13	13	13	13	14	14	15	15	15		125				
Yoshida, Kazuaki (JPN) (198		time	6.20	10.12	14.08	18.08	22.27	26.71	31.11	35.58	40.21	44.99		50.60	6 / 2			
reaction time		interval		3.92	3.96	4.00	4.19	4.44	4.40	4.47	4.63	4.78	5.61			11.88	13.03	13.88
		velocity	7.26	8.93	8.84	8.75	8.35	7.88	7.95	7.83	7.56	7.32	7.13	7.91		8.84	8.06	7.56
H1 lead leg		strides		13	13	13	13	15	15	15	15	15		127				

2016 Shanghai Golden Grand Prix (Shanghai, CHN) (TV Analysis)

FINAL date 14-May-16

Henson (2020) - Athlete First: 2016 year end hurdle report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tinsley, Michael (USA) (1984		time	5.84	9.52	13.28	17.20	21.24		25.48	29.88	34.36	38.92	43.52		48.90	6 / 1			
reaction time	0.198	interval		3.68	3.76	3.92	4.04		4.24	4.40	4.48	4.56	4.60	5.38			11.36	12.68	13.64
		velocity	7.71	9.51	9.31	8.93	8.66		8.25	7.95	7.81	7.68	7.61	7.43	8.18		9.24	8.28	7.70
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	15	15	18.2					
Dobek, Patryk (POL) (1994)		time	5.92	9.68	13.52	17.52	21.56		25.72	30.08	34.48	39.08	43.68		49.01	1 / 2			
reaction time	0.178	interval		3.76	3.84	4.00	4.04		4.16	4.36	4.40	4.60	4.60	5.33			11.60	12.56	13.60
		velocity	7.60	9.31	9.11	8.75	8.66		8.41	8.03	7.95	7.61	7.61	7.50	8.16		9.05	8.36	7.72
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.5	159.5				
Gibson, Jeffery (BAH) (1990)		time	5.92	9.68	13.56	17.52	21.56		25.72	30.08	34.60	39.16	43.76		49.11	4 / 3			
reaction time	0.213	interval		3.76	3.88	3.96	4.04		4.16	4.36	4.52	4.56	4.60	5.35			11.60	12.56	13.68
		velocity	7.60	9.31	9.02	8.84	8.66		8.41	8.03	7.74	7.68	7.61	7.48	8.14		9.05	8.36	7.68
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	14	17.5	157.5				
van Zyl, LJ (RSA) (1985)		time	5.92	9.60	13.48	17.52	21.64		25.92	30.24	34.56	39.04	43.60		49.13	8 / 4			
reaction time	0.168	interval		3.68	3.88	4.04	4.12		4.28	4.32	4.32	4.48	4.56	5.53			11.60	12.72	13.36
		velocity	7.60	9.51	9.02	8.66	8.50		8.18	8.10	8.10	7.81	7.68	7.23	8.14		9.05	8.25	7.86
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	15	15	19	171				
Copello, Yasmani (TUR) (198		time	5.76	9.44	13.28	17.16	21.12		25.24	29.64	34.08	38.80	43.52		49.14	2 / 5			
reaction time	0.162	interval		3.68	3.84	3.88	3.96		4.12	4.40	4.44	4.72	4.72	5.62			11.40	12.48	13.88
		velocity	7.81	9.51	9.11	9.02	8.84		8.50	7.95	7.88	7.42	7.42	7.12	8.14		9.21	8.41	7.56
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	15	15	18	161				
Bett, Nicholas (KEN) (1990)		time	5.96	9.76	13.56	17.56	21.68		25.88	30.12	34.40	39.00	43.64		49.31	5 / 6			
reaction time	0.150	interval		3.80	3.80	4.00	4.12		4.20	4.24	4.28	4.60	4.64	5.67			11.60	12.56	13.52
		velocity	7.55	9.21	9.21	8.75	8.50		8.33	8.25	8.18	7.61	7.54	7.05	8.11		9.05	8.36	7.77
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	15	13	17.2	157.2				
Clement, Kerron (USA) (198		time	6.00	9.76	13.64	17.48	21.48		25.72	30.08	34.60	39.28	44.08		49.56	3 / 7			
reaction time	0.180	interval		3.76	3.88	3.84	4.00		4.24	4.36	4.52	4.68	4.80	5.48			11.48	12.60	14.00
		velocity	7.50	9.31	9.02	9.11	8.75		8.25	8.03	7.74	7.48	7.29	7.30	8.07		9.15	8.33	7.50
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16.5	153.5				
Culson, Javier (PUR) (1984)		time	5.76	9.40	13.12	17.12	21.24		25.48	29.88	34.32	39.00	43.88		49.58	7 / 8			
reaction time	0.211	interval		3.64	3.72	4.00	4.12		4.24	4.40	4.44	4.68	4.88	5.70			11.36	12.76	14.00
		velocity	7.81	9.62	9.41	8.75	8.50		8.25	7.95	7.88	7.48	7.17	7.02	8.07		9.24	8.23	7.50
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17.2	156.2				
Mucheru, Bonface (KEN) (19		time	6.04	9.96	14.04	18.12	22.36		26.64	31.00	35.40				50.16	9 / 9			
reaction time	0.123	interval		3.92	4.08	4.08	4.24		4.28	4.36	4.40						12.08	12.88	
		velocity	7.45	8.93	8.58	8.58	8.25		8.18	8.03	7.95				7.97		8.69	8.15	
H1 lead leg	R	strides	22	15	15	15	15		15	15	15				127				

2016 Seiko Golden Grand Prix (Kawasaki, JPN)

FINAL date 08-May-16

Morioka (2016) - race pattern of top 400m hurdlers in japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nozawa, Keisuke (JPN) (1991		time	5.96	9.58	13.27	17.06	21.03		25.05	29.15	33.45	38.05	42.89		48.67	4 / 1			
reaction time	0.155	interval		3.62	3.69	3.79	3.97		4.02	4.10	4.30	4.60	4.84	5.78	PB		11.10	12.09	13.74
		velocity	7.55	9.67	9.49	9.23	8.82		8.71	8.54	8.14	7.61	7.23	6.92	8.22		9.46	8.68	7.64
H1 lead leg	L	strides	21	13	13	14	14		14	14	15	15	15	19.2	167.2				
Matsushita, Yuki (JPN) (1991		time	6.02	9.82	13.66	17.58	21.57		25.77	30.17	34.69	39.26	43.88		49.10	3 / 3			
reaction time	0.191	interval		3.80	3.84	3.92	3.99		4.20	4.40	4.52	4.57	4.62	5.22			11.56	12.59	13.71
		velocity	7.48	9.21	9.11	8.93	8.77		8.33	7.95	7.74	7.66	7.58	7.66	8.15		9.08	8.34	7.66
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.5	164.5				

2016 Kinan Memorial (Osaka, JPN)

FINAL date 08-May-16

(2016.05.24) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tanabe, Shotaro (JPN) (1994		time	5.99	9.78	13.71	17.68	21.75		25.97	30.42	34.97	39.61	44.39		49.64	8 / 1			
reaction time		interval		3.79	3.93	3.97	4.07		4.22	4.45	4.55	4.64	4.78	5.25	PB		11.69	12.74	13.97
		velocity	7.51	9.23	8.91	8.82	8.60		8.29	7.87	7.69	7.54	7.32	7.62	8.06		8.98	8.24	7.52
H1 lead leg		strides																	

2016 Shizuoka International Athletics Meeting (Fukuroi, JPN)

FINAL date 03-May-16

Morioka (2016) - race pattern of top 400m hurdlers in japan

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nozawa, Keisuke (JPN) (1991	time	5.94	9.56	13.26	17.10	21.09		25.13	29.38	33.93	38.68	43.53		49.07	/ 1			
reaction time	interval		3.62	3.70	3.84	3.99		4.04	4.25	4.55	4.75	4.85	5.54	PB		11.16	12.28	14.15
	velocity	7.58	9.67	9.46	9.11	8.77		8.66	8.24	7.69	7.37	7.22	7.22	8.15		9.41	8.55	7.42
H1 lead leg	strides		13	13	14	14		14	14	15	15	15		127				

2015 Japanese National Junior Championships (Nagoya, JPN)

FINAL date 18-Oct-15

Yasunori (2015) - race pattern analysis of the top 400m hurdlers in Japan

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Watanabe, Yoshiro (JPN) (19	time	6.01	9.75	13.64	17.68	21.78		26.08	30.52	35.02	39.66	44.50		49.97	5 / 1			
reaction time	interval		3.74	3.89	4.04	4.10		4.30	4.44	4.50	4.64	4.84	5.47	PB		11.67	12.84	13.98
	velocity	7.49	9.36	9.00	8.66	8.54		8.14	7.88	7.78	7.54	7.23	7.31	8.00		9.00	8.18	7.51
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				
Toyoda, Masaki (JPN) (1998)	time	6.28	10.32	14.42	18.76	23.10		27.40	31.58	35.98	40.45	45.02		50.16	4 / 2			
reaction time	interval		4.04	4.10	4.34	4.34		4.30	4.18	4.40	4.47	4.57	5.14	PB		12.48	12.82	13.44
	velocity	7.17	8.66	8.54	8.06	8.06		8.14	8.37	7.95	7.83	7.66	7.78	7.97		8.41	8.19	7.81
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				
Obayashi, Masayuki (JPN) (1	time	6.10	9.94	14.08	18.28	22.62		26.89	31.26	35.76	40.30	44.94		50.18	6 / 3			
reaction time	interval		3.84	4.14	4.20	4.34		4.27	4.37	4.50	4.54	4.64	5.24	PB		12.18	12.98	13.68
	velocity	7.38	9.11	8.45	8.33	8.06		8.20	8.01	7.78	7.71	7.54	7.63	7.97		8.62	8.09	7.68
H1 lead leg	strides		15	15	15	15		15	15	15	15	15		135				

2015 IAAF World Championships (Beijing, CHN) (TV Analysis)

FINAL date 25-Aug-15

Henson (2021) - Athlete First: major championships report

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Bett, Nicholas (KEN) (1990)	time	6.04	9.76	13.48	17.24	21.24		25.28	29.40	33.60	37.96	42.56		47.79	9 / 1			
reaction time 0.162	interval		3.72	3.72	3.76	4.00		4.04	4.12	4.20	4.36	4.60	5.23	NR PB		11.20	12.16	13.16
	velocity	7.45	9.41	9.41	9.31	8.75		8.66	8.50	8.33	8.03	7.61	7.65	8.37		9.38	8.63	7.98
H1 lead leg R	strides		13	13	13	13		13	13	13	13	15	17	136				
Kudryavtsev, Denis (RUS) (1	time	5.84	9.48	13.20	16.96	20.84		24.84	29.08	33.40	37.96	42.68		48.05	6 / 2			
reaction time 0.146	interval		3.64	3.72	3.76	3.88		4.00	4.24	4.32	4.56	4.72	5.37	NR PB		11.12	12.12	13.60
	velocity	7.71	9.62	9.41	9.31	9.02		8.75	8.25	8.10	7.68	7.42	7.45	8.32		9.44	8.66	7.72
H1 lead leg L	strides		13	13	13	13		13	14	14	15	15	19	142				
Gibson, Jeffery (BAH) (1990)	time	5.88	9.64	13.36	17.16	21.12		25.08	29.28	33.60	38.08	42.72		48.17	7 / 3			
reaction time 0.184	interval		3.76	3.72	3.80	3.96		3.96	4.20	4.32	4.48	4.64	5.45	NR PB		11.28	12.12	13.44
	velocity	7.65	9.31	9.41	9.21	8.84		8.84	8.33	8.10	7.81	7.54	7.34	8.30		9.31	8.66	7.81
H1 lead leg R	strides		13	13	12	13		13	13	14	14	14	17.5	136.5				
Clement, Kerron (USA) (198	time	5.96	9.68	13.40	17.16	21.12		25.20	29.32	33.60	38.16	42.96		48.18	8 / 4			
reaction time 0.174	interval		3.72	3.72	3.76	3.96		4.08	4.12	4.28	4.56	4.80	5.22			11.20	12.16	13.64
	velocity	7.55	9.41	9.41	9.31	8.84		8.58	8.50	8.18	7.68	7.29	7.66	8.30		9.38	8.63	7.70
H1 lead leg R	strides		13	13	13	13		13	13	13	15	15	17	138				
Mucheru, Bonface (KEN) (19	time	5.96		13.56	17.32	21.20		25.32	29.64	34.04	38.48	43.00		48.33	4 / 5			
reaction time 0.164	interval			7.60	3.76	3.88		4.12	4.32	4.40	4.44	4.52	5.33			11.36	12.32	13.36
	velocity	7.55		9.21	9.31	9.02		8.50	8.10	7.95	7.88	7.74	7.50	8.28		9.24	8.52	7.86
H1 lead leg R	strides		15		13	13			15	15	15	15	18.5	119.5				
Copello, Yasmani (TUR) (198	time	6.00		13.52	17.40	21.40			29.88	34.28	38.84	43.84		48.96	2 / 6			
reaction time 0.204	interval			7.52	3.88	4.00			8.48	4.40	4.56	5.00	5.12			11.40	12.48	13.96
	velocity	7.50		9.31	9.02	8.75			8.25	7.95	7.68	7.00	7.81	8.17		9.21	8.41	7.52
H1 lead leg R	strides		13		13	13				14	14	14	17.5	98.5				
Dobek, Patryk (POL) (1994)	time	6.00		13.64	17.48	21.52		25.68	30.04	34.52	39.16	43.84		49.14	3 / 7			
reaction time 0.176	interval			7.64	3.84	4.04		4.16	4.36	4.48	4.64	4.68	5.30			11.48	12.56	13.80
	velocity	7.50		9.16	9.11	8.66		8.41	8.03	7.81	7.54	7.48	7.55	8.14		9.15	8.36	7.61
H1 lead leg L	strides		13		13	13			14	14	14	14		95				
Tinsley, Michael (USA) (1984	time	5.72	9.32	13.08	16.88	20.88		25.04	29.16	33.48	38.20	43.04		50.02	5 / 8			
reaction time 0.134	interval		3.60	3.76	3.80	4.00		4.16	4.12	4.32	4.72	4.84	6.98			11.16	12.28	13.88
	velocity	7.87	9.72	9.31	9.21	8.75		8.41	8.50	8.10	7.42	7.23	5.73	8.00		9.41	8.55	7.56
H1 lead leg L	strides	21	13	13	13	14			14	14	16	15		133				

2015 Japanese National High School Championships (Wakayama, JPN)

FINAL date 31-Jul-15

Enomoto (2015) - 68th high school championships: JAF scientific committee - biomechanics data collection

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Takada, Kazunari (JPN) (199	time	6.12	10.03	14.08	18.13	22.34		26.66	31.10	35.69	40.27	44.91		50.27	6 / 1			
reaction time	interval		3.91	4.05	4.05	4.21		4.32	4.44	4.59	4.58	4.64	5.36	PB		12.01	12.97	13.81
	velocity	7.35	8.95	8.64	8.64	8.31		8.10	7.88	7.63	7.64	7.54	7.46	7.96		8.74	8.10	7.60
H1 lead leg	strides		14	14	14	15		14	15	15	15	15		131				
Toyada, Masaki (JPN) (1998)	time	6.12	10.04	14.01	18.15	22.32		26.74	31.30	35.82	40.52	45.28		50.85	9 / 2			
reaction time	interval		3.92	3.97	4.14	4.17		4.42	4.56	4.52	4.70	4.76	5.57			12.03	13.15	13.98
	velocity	7.35	8.93	8.82	8.45	8.39		7.92	7.68	7.74	7.45	7.35	7.18	7.87		8.73	7.98	7.51
H1 lead leg	strides		14	14	14	15		15	15	15	15	15		132				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Yamamoto, Tatsuhiro (JPN)		time	6.19	10.13	14.25	18.37	22.62	27.06	31.60	36.14	40.77	45.63		51.32	7 / 3			
	reaction time	interval		3.94	4.12	4.12	4.25	4.44	4.54	4.54	4.63	4.86	5.69	PB		12.18	13.23	14.03
		velocity	7.27	8.88	8.50	8.50	8.24	7.88	7.71	7.71	7.56	7.20	7.03	7.79		8.62	7.94	7.48
	H1 lead leg	strides		14	14	14	15	15	15	15	15	15		132				
Fujii, Ryusei (JPN) (1998)		time	6.19	10.24	14.55	18.97	23.37	27.78	32.23	36.69	41.27	45.96		51.34	4 / 4			
	reaction time	interval		4.05	4.31	4.42	4.40	4.41	4.45	4.46	4.58	4.69	5.38	PB		12.78	13.26	13.73
		velocity	7.27	8.64	8.12	7.92	7.95	7.94	7.87	7.85	7.64	7.46	7.43	7.79		8.22	7.92	7.65
	H1 lead leg	strides		14	15	15	15	15	15	15	15	15		134				
Tashiro, Masahito (JPN) (19		time	6.12	10.01	14.03	18.13	22.37	26.74	31.21	35.85	40.76	46.15		51.92	8 / 5			
	reaction time	interval		3.89	4.02	4.10	4.24	4.37	4.47	4.64	4.91	5.39	5.77			12.01	13.08	14.94
		velocity	7.35	9.00	8.71	8.54	8.25	8.01	7.83	7.54	7.13	6.49	6.93	7.70		8.74	8.03	7.03
	H1 lead leg	strides		14	15	15	15	15	15	15	15	17		136				
Hamamura, Kazuki (JPN) (19		time	6.16	10.33	14.43	18.64	22.96	27.38	31.97	36.75	41.86	47.31		53.19	3 / 6			
	reaction time	interval		4.17	4.10	4.21	4.32	4.42	4.59	4.78	5.11	5.45	5.88			12.48	13.33	15.34
		velocity	7.31	8.39	8.54	8.31	8.10	7.92	7.63	7.32	6.85	6.42	6.80	7.52		8.41	7.88	6.84
	H1 lead leg	strides		15	15	15	15	15	16	15	17	17		140				
Takahashi, Rui (JPN) (1997)		time	6.32	10.44	14.75	19.04	23.34	27.64	32.12	36.60	41.21	46.33		53.24	5 / 7			
	reaction time	interval		4.12	4.31	4.29	4.30	4.30	4.48	4.48	4.61	5.12	6.91			12.72	13.08	14.21
		velocity	7.12	8.50	8.12	8.16	8.14	8.14	7.81	7.81	7.59	6.84	5.79	7.51		8.25	8.03	7.39
	H1 lead leg	0.167 strides		15	15	15	15	15	17	15	17	16		140				
Minato, Ozora (JPN) (1997)		time	6.47	10.53	14.70	18.85	23.16	27.66	32.45	37.60	43.04	48.43		54.55	2 / 8			
	reaction time	interval		4.06	4.17	4.15	4.31	4.50	4.79	5.15	5.44	5.39	6.12			12.38	13.60	15.98
		velocity	6.96	8.62	8.39	8.43	8.12	7.78	7.31	6.80	6.43	6.49	6.54	7.33		8.48	7.72	6.57
	H1 lead leg	strides		15	15	15	15	17	17	16	17	17		144				

2015 Japanese National Championships (Niigata, JPN)

FINAL

date 28-Jun-15

Yasunori (2015) - race pattern analysis of the top 400m hurdlers in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Matsushita, Yuki (JPN) (1991		time	6.11	9.91	13.83	17.78	21.88		26.15	30.57	35.21	39.86	44.55		49.76	6 / 1			
	reaction time	0.169 interval		3.80	3.92	3.95	4.10		4.27	4.42	4.64	4.65	4.69	5.21			11.67	12.79	13.98
		velocity	7.36	9.21	8.93	8.86	8.54		8.20	7.92	7.54	7.53	7.46	7.68	8.04		9.00	8.21	7.51
	H1 lead leg	R strides	21	13	13	13	13		14	14	15	15	15	19	165				
Kishimoto, Takayuki (JPN) (		time	6.01	9.76	13.61	17.55	21.64		25.91	30.26	34.78	39.42	44.26		49.81	5 / 2			
	reaction time	0.134 interval		3.75	3.85	3.94	4.09		4.27	4.35	4.52	4.64	4.84	5.55			11.54	12.71	14.00
		velocity	7.49	9.33	9.09	8.88	8.56		8.20	8.05	7.74	7.54	7.23	7.21	8.03		9.10	8.26	7.50
	H1 lead leg	R strides	21	13	13	13	13		14	14	15	15	15	19	165				
Konishi, Yuta (JPN) (1990)		time	6.21	10.05	14.00	18.02	22.12		26.37	30.71	35.21	39.86	44.58		50.06	4 / 3			
	reaction time	0.166 interval		3.84	3.95	4.02	4.10		4.25	4.34	4.50	4.65	4.72	5.48			11.81	12.69	13.87
		velocity	7.25	9.11	8.86	8.71	8.54		8.24	8.06	7.78	7.53	7.42	7.30	7.99		8.89	8.27	7.57
	H1 lead leg	L strides	21	13	13	13	13		14	14	15	15	15	19	165				

2015 Seiko Golden Grand Prix (Kawasaki, JPN)

FINAL

date 10-May-15

Yasunori (2015) - race pattern analysis of the top 400m hurdlers in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Konishi, Yuta (JPN) (1990)		time	6.17	10.14	14.16	18.30	22.42		26.57	30.79	35.21	39.71	44.38		49.70	/ 2			
	reaction time	interval		3.97	4.02	4.14	4.12		4.15	4.22	4.42	4.50	4.67	5.32			12.13	12.49	13.59
		velocity	7.29	8.82	8.71	8.45	8.50		8.43	8.29	7.92	7.78	7.49	7.52	8.05		8.66	8.41	7.73
	H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				

2015 Shizuoka International Athletics Meeting (Fukuroi, JPN)

FINAL

date 03-May-15

Yasunori (2015) - race pattern analysis of the top 400m hurdlers in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Konishi, Yuta (JPN) (1990)		time	6.17	10.04	13.98	18.00	22.15		26.32	30.76	35.30	39.97	44.64		49.98	/ 3			
	reaction time	0.189 interval		3.87	3.94	4.02	4.15		4.17	4.44	4.54	4.67	4.67	5.34			11.83	12.76	13.88
		velocity	7.29	9.04	8.88	8.71	8.43		8.39	7.88	7.71	7.49	7.49	7.49	8.00		8.88	8.23	7.56
	H1 lead leg	strides		14	14	14	14		14	15	15	15	15		130				

B Race

date 03-May-15

Yasunori (2015) - race pattern analysis of the top 400m hurdlers in Japan

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Matsushita, Yuki (JPN) (1991		time	6.04	9.88	13.78	17.72	21.76		26.03	30.40	35.00	39.67	44.47		49.78	/ 3			
	reaction time	0.164 interval		3.84	3.90	3.94	4.04		4.27	4.37	4.60	4.67	4.80	5.31			11.68	12.68	14.07
		velocity	7.45	9.11	8.97	8.88	8.66		8.20	8.01	7.61	7.49	7.29	7.53	8.04		8.99	8.28	7.46
	H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				

2014 European Championships (Zurich, SUI)

FINAL

date 15-Aug-14

Green (2015) - twitter.com/jackpgreen (from Behm?)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hussein, Kariem (SUI) (1989)		time	6.04	9.80	13.72	17.72	21.76		25.88	30.08	34.40	38.80	43.44		48.96	/ 1			
	reaction time	0.169 interval		3.76	3.92	4.00	4.04		4.12	4.20	4.32	4.40	4.64	5.52	PB		11.68	12.36	13.36
		velocity	7.45	9.31	8.93	8.75	8.66		8.50	8.33	8.10	7.95	7.54	7.25	8.17		8.99	8.50	7.86

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	L	strides		13	13	13	13	14	14	14	14	15		123				
Mägi, Rasmus (EST) (1992)		time	6.10	9.90	13.78	17.70	21.74	25.86	30.26	34.70	39.30	43.90		49.06	/ 2			
reaction time	0.156	interval		3.80	3.88	3.92	4.04	4.12	4.40	4.44	4.60	4.60	5.16			11.60	12.56	13.64
		velocity	7.38	9.21	9.02	8.93	8.66	8.50	7.95	7.88	7.61	7.61	7.75	8.15		9.05	8.36	7.70
H1 lead leg	L	strides		13	13	13	13	13	14	14	14	14		121				
Kudryavtsev, Denis (RUS) (1		time	6.12	9.92	13.80	17.68	21.64	25.76	30.12	34.48	39.08	43.84		49.16	/ 3			
reaction time	0.158	interval		3.80	3.88	3.88	3.96	4.12	4.36	4.36	4.60	4.76	5.32			11.56	12.44	13.72
		velocity	7.35	9.21	9.02	9.02	8.84	8.50	8.03	8.03	7.61	7.35	7.52	8.14		9.08	8.44	7.65
H1 lead leg	L	strides		13	13	13	13	13	14	14	15	15		123				
Chalyy, Timofey (RUS) (1994		time	6.08	9.88	13.84	17.84	21.92	26.08	30.56	35.12	39.80	44.52		49.56	/ 4			
reaction time	0.159	interval		3.80	3.96	4.00	4.08	4.16	4.48	4.56	4.68	4.72	5.04			11.76	12.72	13.96
		velocity	7.40	9.21	8.84	8.75	8.58	8.41	7.81	7.68	7.48	7.42	7.94	8.07		8.93	8.25	7.52
H1 lead leg	L	strides		13	13	13	13	13	14	14	14	14		121				
Franz, Felix (GER) (1993)		time	6.03	9.91	13.75	17.83	21.91	26.11	30.55	35.07	39.79	44.51		49.83	/ 5			
reaction time	0.174	interval		3.88	3.84	4.08	4.08	4.20	4.44	4.52	4.72	4.72	5.32			11.80	12.72	13.96
		velocity	7.46	9.02	9.11	8.58	8.58	8.33	7.88	7.74	7.42	7.42	7.52	8.03		8.90	8.25	7.52
H1 lead leg	L	strides		13	13	13	13	13	14	14	14	14		121				
Bekrić, Emir (SRB) (1991)		time	6.00	9.78	13.58	17.46	21.42	25.46	29.78	34.30	39.06	44.06		49.90	/ 6			
reaction time	0.233	interval		3.78	3.80	3.88	3.96	4.04	4.32	4.52	4.76	5.00	5.84			11.46	12.32	14.28
		velocity	7.50	9.26	9.21	9.02	8.84	8.66	8.10	7.74	7.35	7.00	6.85	8.02		9.16	8.52	7.35
H1 lead leg	L	strides		13	13	13	13	13	14	14	14	14		121				
Königsmark, Varg (GER) (19		time	6.03	9.79	13.71	17.59	21.51	25.71	30.03	34.55	39.31	44.35		49.91	/ 7			
reaction time	0.190	interval		3.76	3.92	3.88	3.92	4.20	4.32	4.52	4.76	5.04	5.56			11.56	12.44	14.32
		velocity	7.46	9.31	8.93	9.02	8.93	8.33	8.10	7.74	7.35	6.94	7.19	8.01		9.08	8.44	7.33
H1 lead leg	L	strides		13	13	13	13	14	14	14	15	15		124				
Mörö, Oskari (FIN) (1993)		time	6.10	9.86	13.70	17.78	21.90	26.18	30.54	35.02	39.74	44.62		50.14	/ 8			
reaction time	0.149	interval		3.76	3.84	4.08	4.12	4.28	4.36	4.48	4.72	4.88	5.52			11.68	12.76	14.08
		velocity	7.38	9.31	9.11	8.58	8.50	8.18	8.03	7.81	7.42	7.17	7.25	7.98		8.99	8.23	7.46
H1 lead leg	R	strides		13	13	13	13	14	14	14	14	15		123				

2014 Japanese National Championships (Fukushima, JPN)

FINAL date 08-Jun-14

Yasunori (2014) - race pattern analysis of Japanese top 400m hurdlers for major domestic competitions

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (		time	5.89	9.64	13.53	17.52	21.62		25.89	30.28	34.75	39.32	44.01		49.49	4 / 1			
reaction time		interval		3.75	3.89	3.99	4.10		4.27	4.39	4.47	4.57	4.69	5.48			11.63	12.76	13.73
		velocity	7.64	9.33	9.00	8.77	8.54		8.20	7.97	7.83	7.66	7.46	7.30	8.08		9.03	8.23	7.65
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18.5	164.5				
Nakamura, Akihiko (JPN) (19		time	6.09	10.03	14.05	18.12	22.32		26.62	31.01	35.55	40.19	44.74		49.95	5 / 2			
reaction time		interval		3.94	4.02	4.07	4.20		4.30	4.39	4.54	4.64	4.55	5.21			12.03	12.89	13.73
		velocity	7.39	8.88	8.71	8.60	8.33		8.14	7.97	7.71	7.54	7.69	7.68	8.01		8.73	8.15	7.65
H1 lead leg	R	strides	21	13	13	13	14		14	14	14	15	15	19	165				
Konishi, Yuta (JPN) (1990)		time	5.99	9.83	13.68	17.58	21.55		25.74	30.06	34.60	39.27	44.19		49.97	7 / 3			
reaction time		interval		3.84	3.85	3.90	3.97		4.19	4.32	4.54	4.67	4.92	5.78			11.59	12.48	14.13
		velocity	7.51	9.11	9.09	8.97	8.82		8.35	8.10	7.71	7.49	7.11	6.92	8.00		9.06	8.41	7.43
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19.2	171.2				
Tateno, Tetsuya (JPN) (1991)		time	6.04	9.81	13.63	17.55	21.59		25.79	30.23	34.77	39.57	44.47		49.98	6 / 4			
reaction time		interval		3.77	3.82	3.92	4.04		4.20	4.44	4.54	4.80	4.90	5.51			11.51	12.68	14.24
		velocity	7.45	9.28	9.16	8.93	8.66		8.33	7.88	7.71	7.29	7.14	7.26	8.00		9.12	8.28	7.37
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	16	16	19.2	174.2				
Yoshida, Kazuaki (JPN) (198		time	5.96	9.75	13.60	17.55	21.60		25.87	30.27	34.76	39.40	44.27		50.05	9 / 5			
reaction time		interval		3.79	3.85	3.95	4.05		4.27	4.40	4.49	4.64	4.87	5.78			11.59	12.72	14.00
		velocity	7.55	9.23	9.09	8.86	8.64		8.20	7.95	7.80	7.54	7.19	6.92	7.99		9.06	8.25	7.50
H1 lead leg	L	strides	21	13	13	13	13		13	15	15	15	15	18.2	164.2				

2014 Seiko Golden Grand Prix (Tokyo, JPN)

FINAL date 11-May-14

Yasunori (2014) - race pattern analysis of Japanese top 400m hurdlers for major domestic competitions

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (		time	5.92	9.64	13.46	17.41	21.60		25.97	30.47	34.97	39.61	44.33		49.81	/ 4			
reaction time		interval		3.72	3.82	3.95	4.19		4.37	4.50	4.50	4.64	4.72	5.48			11.49	13.06	13.86
		velocity	7.60	9.41	9.16	8.86	8.35		8.01	7.78	7.78	7.54	7.42	7.30	8.03		9.14	8.04	7.58
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Abe, Takatoshi (JPN) (1991)		time	6.14	9.94	13.78	17.70	21.74		25.84	30.28	34.87	39.82	44.94		51.14	/ 7			
reaction time		interval		3.80	3.84	3.92	4.04		4.10	4.44	4.59	4.95	5.12	6.20			11.56	12.58	14.66
		velocity	7.33	9.21	9.11	8.93	8.66		8.54	7.88	7.63	7.07	6.84	6.45	7.82		9.08	8.35	7.16
H1 lead leg		strides		13	13	13	13		14	14	14	15	16		125				
Fueki, Yasuhiro (JPN) (1985)		time	6.01	9.90	13.80	17.72	21.77		25.92	30.39	35.04	39.98	45.25		51.68	/ 8			

reaction time	interval		3.89	3.90	3.92	4.05	4.15	4.47	4.65	4.94	5.27	6.43			11.71	12.67	14.86
	velocity	7.49	9.00	8.97	8.93	8.64	8.43	7.83	7.53	7.09	6.64	6.22	7.74		8.97	8.29	7.07
H1 lead leg	strides		14	14	14	14	14	14	15	15	16		130				

2014 Shizuoka International Athletics Meeting (Fukuroi, JPN)

A FINAL

date 03-May-14

Yasunori (2014) - race pattern analysis of Japanese top 400m hurdlers for major domestic competitions

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (	time	5.96	9.71	13.56	17.60	21.75		26.07	30.49	35.03	39.70	44.42		49.75	/ 1			
reaction time	interval		3.75	3.85	4.04	4.15		4.32	4.42	4.54	4.67	4.72	5.33			11.64	12.89	13.93
	velocity	7.55	9.33	9.09	8.66	8.43		8.10	7.92	7.71	7.49	7.42	7.50	8.04		9.02	8.15	7.54
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Abe, Takatoshi (JPN) (1991)	time	6.19	10.04	13.96	18.03	22.12		26.42	30.77	35.26	39.91	44.68		50.32	/ 3			
reaction time	interval		3.85	3.92	4.07	4.09		4.30	4.35	4.49	4.65	4.77	5.64			11.84	12.74	13.91
	velocity	7.27	9.09	8.93	8.60	8.56		8.14	8.05	7.80	7.53	7.34	7.09	7.95		8.87	8.24	7.55
H1 lead leg	strides		13	13	13	13		14	14	14	14	15		123				

B FINAL

date 03-May-14

Yasunori (2014) - race pattern analysis of Japanese top 400m hurdlers for major domestic competitions

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Yoshida, Kazuaki (JPN) (198	time	6.04	9.91	13.87	17.83	21.92		26.09	30.48	34.95	39.60	44.42		50.15	/ 1			
reaction time	interval		3.87	3.96	3.96	4.09		4.17	4.39	4.47	4.65	4.82	5.73			11.79	12.65	13.94
	velocity	7.45	9.04	8.84	8.84	8.56		8.39	7.97	7.83	7.53	7.26	6.98	7.98		8.91	8.30	7.53
H1 lead leg	strides		13	13	13	13		13	15	15	15	15		125				

C FINAL

date 03-May-14

Yasunori (2014) - race pattern analysis of Japanese top 400m hurdlers for major domestic competitions

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kato, Seiya (JPN) (1992)	time	6.17	10.01	13.93	17.93	22.13		26.35	30.74	35.26	39.90	44.74		50.40	/ 1			
reaction time	interval		3.84	3.92	4.00	4.20		4.22	4.39	4.52	4.64	4.84	5.66	PB		11.76	12.81	14.00
	velocity	7.29	9.11	8.93	8.75	8.33		8.29	7.97	7.74	7.54	7.23	7.07	7.94		8.93	8.20	7.50
H1 lead leg	strides		13	13	13	14		14	15	15	15	15		127				
Ideura, Noriuki (JPN) (1987)	time	6.36	10.40	14.47	18.61	22.78		26.95	31.22	35.59	40.19	45.01		50.59	/ 2			
reaction time	interval		4.04	4.07	4.14	4.17		4.17	4.27	4.37	4.60	4.82	5.58			12.25	12.61	13.79
	velocity	7.08	8.66	8.60	8.45	8.39		8.39	8.20	8.01	7.61	7.26	7.17	7.91		8.57	8.33	7.61
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				

2013 IAAF World Championships (Moscow, RUS) (TV Analysis

FINAL

date 15-Aug-13

Henson (2021) - Athlete First: major championships report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Gordon, Jehue (TRI) (1991)		time	5.73	9.40	13.20	17.07	20.97		24.97	29.07	33.27	37.63	42.17		47.69	6 / 1			
reaction time	0.174	interval		3.67	3.80	3.87	3.90		4.00	4.10	4.20	4.36	4.54	5.52			11.34	12.00	13.10
		velocity	7.85	9.54	9.21	9.04	8.97		8.75	8.54	8.33	8.03	7.71	7.25	8.39		9.26	8.75	8.02
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17.7	156.7				
Tinsley, Michael (USA) (1984		time	5.63	9.13	12.80	16.57	20.43		24.50	28.67	33.03	37.57	42.20		47.70	3 / 2			
reaction time	0.133	interval		3.50	3.67	3.77	3.86		4.07	4.17	4.36	4.54	4.63	5.50	PB		10.94	12.10	13.53
		velocity	7.99	10.00	9.54	9.28	9.07		8.60	8.39	8.03	7.71	7.56	7.27	8.39		9.60	8.68	7.76
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18.5	164.5				
Bekrić, Emir (SRB) (1991)		time	5.90	9.50	13.20	17.00	20.87		24.93	29.23	33.63	38.20	42.73		48.05	8 / 3			
reaction time	0.202	interval		3.60	3.70	3.80	3.87		4.06	4.30	4.40	4.57	4.53	5.32	NR PB		11.10	12.23	13.50
		velocity	7.63	9.72	9.46	9.21	9.04		8.62	8.14	7.95	7.66	7.73	7.52	8.32		9.46	8.59	7.78
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	16.7	158.7				
Cisneros, Omar (CUB) (1989		time	5.80	9.33	13.03	16.87	20.77		24.83	29.07	33.43	38.00	42.63		48.12	5 / 4			
reaction time	0.219	interval		3.53	3.70	3.84	3.90		4.06	4.24	4.36	4.57	4.63	5.49			11.07	12.20	13.56
		velocity	7.76	9.92	9.46	9.11	8.97		8.62	8.25	8.03	7.66	7.56	7.29	8.31		9.49	8.61	7.74
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.5	159.5				
Sańchez, Félix (DOM) (1977)		time	5.80	9.40	13.26	17.17	21.23		25.37	29.60	33.90	38.33	42.90		48.22	4 / 5			
reaction time	0.175	interval		3.60	3.86	3.91	4.06		4.14	4.23	4.30	4.43	4.57	5.32			11.37	12.43	13.30
		velocity	7.76	9.72	9.07	8.95	8.62		8.45	8.27	8.14	7.90	7.66	7.52	8.30		9.23	8.45	7.89
H1 lead leg	L	strides	22	13	14	13	14		14	14		15	15	18	152				
Culson, Javier (PUR) (1984)		time	5.70	9.33	13.00	16.70	20.60		24.63	28.87	33.27	37.87	42.60		48.38	7 / 6			
reaction time	0.189	interval		3.63	3.67	3.70	3.90		4.03	4.24	4.40	4.60	4.73	5.78			11.00	12.17	13.73
		velocity	7.89	9.64	9.54	9.46	8.97		8.68	8.25	7.95	7.61	7.40	6.92	8.27		9.55	8.63	7.65
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17.2	156.2				
Hann, Mamadou Kasse (SEN		time	6.00	9.77	13.60	17.37	21.33		25.33	29.60	34.17	38.70	43.37		48.68	2 / 7			
reaction time	0.195	interval		3.77	3.83	3.77	3.96		4.00	4.27	4.57	4.53	4.67	5.31			11.37	12.23	13.77
		velocity	7.50	9.28	9.14	9.28	8.84		8.75	8.20	7.66	7.73	7.49	7.53	8.22		9.23	8.59	7.63
H1 lead leg	L	strides	20	13	13	13	13		13	14		14	14	16.7	143.7				
Clement, Kerron (USA) (198		time	5.93	9.70	13.53	17.33	21.27		25.37	29.50	34.03	38.70	43.50		49.08	1 / 8			
reaction time	0.165	interval		3.77	3.83	3.80	3.94		4.10	4.13	4.53	4.67	4.80	5.58			11.40	12.17	14.00
		velocity	7.59	9.28	9.14	9.21	8.88		8.54	8.47	7.73	7.49	7.29	7.17	8.15		9.21	8.63	7.50
H1 lead leg	R	strides	20	13	13	13	13		13	13		15	15	16.7	144.7				

2013 Chinese National Grand Prix Final (Shenyang, CHN)

FINAL date 16-Jun-13 *Li (2008) - research on training characteristics of Li Zhilong's of Chinese men's 400m hurdles*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Zhilong (CHN) (1988)	time	6.16	10.08	14.08	18.12	22.28		26.56	30.92	35.36	39.96	44.72		49.96	/ 1			
reaction time	interval		3.92	4.00	4.04	4.16		4.28	4.36	4.44	4.60	4.76	5.24			11.96	12.80	13.80
	velocity	7.31	8.93	8.75	8.66	8.41		8.18	8.03	7.88	7.61	7.35	7.63	8.01		8.78	8.20	7.61
H1 lead leg	strides																	

2013 Chinese National Championships (Suzhou, CHN)

FINAL date 30-May-13 *Li (2008) - research on training characteristics of Li Zhilong's of Chinese men's 400m hurdles*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Zhilong (CHN) (1988)	time	6.08	9.96	13.96	18.00	22.16		26.48	30.92	35.52	40.32	45.56		51.41	/ 3			
reaction time	interval		3.88	4.00	4.04	4.16		4.32	4.44	4.60	4.80	5.24	5.85			11.92	12.92	14.64
	velocity	7.40	9.02	8.75	8.66	8.41		8.10	7.88	7.61	7.29	6.68	6.84	7.78		8.81	8.13	7.17
H1 lead leg	strides																	

2013 Chinese National Grand Prix (Zhaoqing, CHN)

FINAL date 28-Apr-13 *Li (2008) - research on training characteristics of Li Zhilong's of Chinese men's 400m hurdles*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Zhilong (CHN) (1988)	time	6.24	10.16	14.20	18.28	22.44		26.72	31.16	35.76	40.48	45.44		50.96	/ 2			
reaction time	interval		3.92	4.04	4.08	4.16		4.28	4.44	4.60	4.72	4.96	5.52			12.04	12.88	14.28
	velocity	7.21	8.93	8.66	8.58	8.41		8.18	7.88	7.61	7.42	7.06	7.25	7.85		8.72	8.15	7.35
H1 lead leg	strides																	

2012 Chinese National Championships (Kunshan, CHN)

FINAL date 23-Sep-12 *Li (2008) - research on training characteristics of Li Zhilong's of Chinese men's 400m hurdles*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Zhilong (CHN) (1988)	time	6.04	9.88	13.84	17.88	22.00		26.28	30.72	35.24	39.92	44.76		50.25	/ 1			
reaction time	interval		3.84	3.96	4.04	4.12		4.28	4.44	4.52	4.68	4.84	5.49			11.84	12.84	14.04
	velocity	7.45	9.11	8.84	8.66	8.50		8.18	7.88	7.74	7.48	7.23	7.29	7.96		8.87	8.18	7.48
H1 lead leg	strides																	

2012 Olympic Games (London, GBR)

FINAL date 06-Aug-12 *Hillier (2012) - uka 2012 olympic games report: 400m hurdles*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Sańchez, Félix (DOM) (1977)		time	5.76	9.25	12.94	16.71	20.68	22.48	24.86	29.04	33.28	37.68	42.27		47.63	7 / 1			
reaction time	0.158	interval		3.49	3.69	3.77	3.97		4.18	4.18	4.24	4.40	4.59	5.36			10.95	12.33	13.23
		velocity	7.81	10.03	9.49	9.28	8.82	8.90	8.37	8.37	8.25	7.95	7.63	7.46	8.40		9.59	8.52	7.94
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18.5	164.5				
Tinsley, Michael (USA) (1984		time	5.79	9.39	13.06	16.87	20.87	22.67	25.08	29.26	33.49	37.97	42.43		47.91	6 / 2			
reaction time	0.184	interval		3.60	3.67	3.81	4.00		4.21	4.18	4.23	4.48	4.46	5.48	PB		11.08	12.39	13.17
		velocity	7.77	9.72	9.54	9.19	8.75	8.82	8.31	8.37	8.27	7.81	7.85	7.30	8.35		9.48	8.47	7.97
H1 lead leg	L	strides	21	13	13	13	14		14	14	14	15	15	18	164				
Culson, Javier (PUR) (1984)		time	5.68	9.19	12.84	16.56	20.47	22.27	24.46	28.72	33.20	37.69	42.40		48.10	5 / 3			
reaction time	0.196	interval		3.51	3.65	3.72	3.91		3.99	4.26	4.48	4.49	4.71	5.70			10.88	12.16	13.68
		velocity	7.92	9.97	9.59	9.41	8.95	8.98	8.77	8.22	7.81	7.80	7.43	7.02	8.32		9.65	8.63	7.68
H1 lead leg	L	strides	21	13	13	13	13		13	13	14	14	14	17.5	158.5				
Greene, David (Dai) (GBR) (1		time	5.82	9.44	13.18	16.98	20.96	22.76	25.12	29.32	33.64	38.10	42.84		48.24	3 / 4			
reaction time	0.150	interval		3.62	3.74	3.80	3.98		4.16	4.20	4.32	4.46	4.74	5.40			11.16	12.34	13.52
		velocity	7.73	9.67	9.36	9.21	8.79	8.79	8.41	8.33	8.10	7.85	7.38	7.41	8.29		9.41	8.51	7.77
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	16	19.2	172.2				
Taylor, Angelo (USA) (1978)		time	5.79	9.27	12.85	16.56	20.39	22.19	24.49	28.67	33.13	37.80	42.59		48.25	4 / 5			
reaction time	0.158	interval		3.48	3.58	3.71	3.83		4.10	4.18	4.46	4.67	4.79	5.66			10.77	12.11	13.92
		velocity	7.77	10.06	9.78	9.43	9.14	9.01	8.54	8.37	7.85	7.49	7.31	7.07	8.29		9.75	8.67	7.54
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	15	15	18.2	163.2				
Gordon, Jehue (TRI) (1991)		time	5.72	9.28	13.07	16.92	20.93	22.73	25.02	29.14	33.40	38.05	43.07		48.86	8 / 6			
reaction time	0.165	interval		3.56	3.79	3.85	4.01		4.09	4.12	4.26	4.65	5.02	5.79			11.20	12.22	13.93
		velocity	7.87	9.83	9.23	9.09	8.73	8.80	8.56	8.50	8.22	7.53	6.97	6.91	8.19		9.38	8.59	7.54
H1 lead leg	L	strides	21	13	13	13	13		13	14	15	15	15		145				
Green, Leford (JAM) (1986)		time	5.98	9.75	13.31	17.20	21.32	23.12	25.69	30.12	34.71	39.27	42.88		49.12	9 / 7			
reaction time	0.194	interval		3.77	3.56	3.89	4.12		4.37	4.43	4.59	4.56	3.61	6.24			11.22	12.92	12.76
		velocity	7.53	9.28	9.83	9.00	8.50	8.65	8.01	7.90	7.63	7.68	9.70	6.41	8.14		9.36	8.13	8.23
H1 lead leg	L	strides	21	13	13	13	13		13	14	15	15	15		145				
Clement, Kerron (USA) (198		time	5.87	9.54	13.10	16.86	20.78	22.58	24.89	29.20	33.78	38.56	43.44		49.15	2 / 8			
reaction time	0.148	interval		3.67	3.56	3.76	3.92		4.11	4.31	4.58	4.78	4.88	5.71			10.99	12.34	14.24
		velocity	7.67	9.54	9.83	9.31	8.93	8.86	8.52	8.12	7.64	7.32	7.17	7.01	8.14		9.55	8.51	7.37
H1 lead leg	R	strides	21	13	13	13	13		13	13	15	15	15		144				

Semi-Final 1 date 04-Aug-12 *Hillier (2012) - uka 2012 olympic games report: 400m hurdles*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1	time	5.91	9.54	13.28	17.13	21.07	22.67	25.17	29.38	33.67	38.17	42.79		48.19	7 / 4			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.181	interval		3.63	3.74	3.85	3.94		4.10	4.21	4.29	4.50	4.62	5.40			11.22	12.25	13.41
		velocity	7.61	9.64	9.36	9.09	8.88	8.82	8.54	8.31	8.16	7.78	7.58	7.41	8.30		9.36	8.57	7.83
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15		152				

Heat 5

date 03-Aug-12

Haines (2012) - mikehainesperformance.wordpress.com/2012/08/05/broadening-my-horizons-400m-hurdles-analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Taylor, Angelo (USA) (1978)		time	5.92	9.44	13.26	17.06	21.02	22.62	25.24	29.66	34.08	38.68	43.64		49.29	3 / 1			
reaction time	0.187	interval		3.52	3.82	3.80	3.96		4.22	4.42	4.42	4.60	4.96	5.65			11.14	12.60	13.98
		velocity	7.60	9.94	9.16	9.21	8.84	8.84	8.29	7.92	7.92	7.61	7.06	7.08	8.12		9.43	8.33	7.51
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	14	14	18	161				

Heat 3

date 03-Aug-12

Hillier (2012) - uka 2012 olympic games report: 400m hurdles

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1		time	6.02	9.76	13.59	17.48	21.52	23.12	25.75	30.04	34.44	39.01	43.64		48.98	1 / 1			
reaction time	0.167	interval		3.74	3.83	3.89	4.04		4.23	4.29	4.40	4.57	4.63	5.34			11.46	12.56	13.60
		velocity	7.48	9.36	9.14	9.00	8.66	8.65	8.27	8.16	7.95	7.66	7.56	7.49	8.17		9.16	8.36	7.72
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15		152				

2012 Italian National Championships (Napoli, ITA)

FINAL

date 08-Jul-12

FIDAL - Centro Studi & Ricerche (2012) - www.youtube.com/watch?v=Jmz79eerIOs

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Bencosme, José Reynaldo (I		time	6.20	10.00	13.93	17.93	21.97		26.05	30.36	34.75	39.24	43.91		49.33	6 / 1			
reaction time		interval		3.80	3.93	4.00	4.04		4.08	4.31	4.39	4.49	4.67	5.42	PB		11.73	12.43	13.55
		velocity	7.26	9.21	8.91	8.75	8.66		8.58	8.12	7.97	7.80	7.49	7.38	8.11		8.95	8.45	7.75
H1 lead leg		strides																	

2012 Japanese National Championships (Osaka, JPN)

FINAL

date 09-Jun-12

Yasunori (2013) - race pattern analysis for the top Japanese 400m hurdlers in major domestic competitions

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (		time	5.76	9.43	13.25	17.15	21.25		25.49	29.74	34.16	38.66	43.28		48.41	5 / 1			
reaction time		interval		3.67	3.82	3.90	4.10		4.24	4.25	4.42	4.50	4.62	5.13	PB		11.39	12.59	13.54
		velocity	7.81	9.54	9.16	8.97	8.54		8.25	8.24	7.92	7.78	7.58	7.80	8.26		9.22	8.34	7.75
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15	18	164				
Nakamura, Akihiko (JPN) (19		time	6.09	9.96	14.01	18.15	22.34		26.63	30.98	35.42	40.01	44.49		49.38	6 / 2			
reaction time		interval		3.87	4.05	4.14	4.19		4.29	4.35	4.44	4.59	4.48	4.89	PB		12.06	12.83	13.51
		velocity	7.39	9.04	8.64	8.45	8.35		8.16	8.05	7.88	7.63	7.81	8.18	8.10		8.71	8.18	7.77
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	15	15	18.2	163.2				
Tateno, Tetsuya (JPN) (1991)		time	6.12	9.96	13.81	17.80	21.85		26.09	30.43	34.83	39.48	44.20		49.49	7 / 3			
reaction time		interval		3.84	3.85	3.99	4.05		4.24	4.34	4.40	4.65	4.72	5.29	=PB		11.68	12.63	13.77
		velocity	7.35	9.11	9.09	8.77	8.64		8.25	8.06	7.95	7.53	7.42	7.56	8.08		8.99	8.31	7.63
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	16	16	19.5	174.5				
Imazeki, Yuta (JPN) (1987)		time	6.19	10.14	14.11	18.25	22.48		26.72	30.96	35.25	39.69	44.21		49.50	8 / 4			
reaction time		interval		3.95	3.97	4.14	4.23		4.24	4.24	4.29	4.44	4.52	5.29			12.06	12.71	13.25
		velocity	7.27	8.86	8.82	8.45	8.27		8.25	8.25	8.16	7.88	7.74	7.56	8.08		8.71	8.26	7.92
H1 lead leg	R	strides	22	14	14	14	14		15	15	15	15	15	18.7	171.7				
Abe, Takatoshi (JPN) (1991)		time	6.02	9.79	13.57	17.42	21.46		25.66	29.93	34.45	39.15	43.99		49.57	4 / 5			
reaction time		interval		3.77	3.78	3.85	4.04		4.20	4.27	4.52	4.70	4.84	5.58			11.40	12.51	14.06
		velocity	7.48	9.28	9.26	9.09	8.66		8.33	8.20	7.74	7.45	7.23	7.17	8.07		9.21	8.39	7.47
H1 lead leg	R	strides	20	13	13	13	13		14	14	15	15	15	18.2	163.2				

2012 Shizuoka International Athletics Meeting (Fukuroi, JPN)

A FINAL

date 03-May-12

Yasunori (2013) - race pattern analysis for the top Japanese 400m hurdlers in major domestic competitions

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (		time	5.77	9.51	13.31	17.25	21.35		25.69	30.04	34.54	39.09	43.69		48.88	/ 1			
reaction time		interval		3.74	3.80	3.94	4.10		4.34	4.35	4.50	4.55	4.60	5.19			11.48	12.79	13.65
		velocity	7.80	9.36	9.21	8.88	8.54		8.06	8.05	7.78	7.69	7.61	7.71	8.18		9.15	8.21	7.69
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Imazeki, Yuta (JPN) (1987)		time	6.22	10.11	14.01	18.00	22.15		26.30	30.59	35.08	39.68	44.38		49.76	/ 3			
reaction time		interval		3.89	3.90	3.99	4.15		4.15	4.29	4.49	4.60	4.70	5.38			11.78	12.59	13.79
		velocity	7.23	9.00	8.97	8.77	8.43		8.43	8.16	7.80	7.61	7.45	7.43	8.04		8.91	8.34	7.61
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				

B FINAL

date 03-May-12

Yasunori (2013) - race pattern analysis for the top Japanese 400m hurdlers in major domestic competitions

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nozawa, Keisuke (JPN) (1991		time	6.17	10.07	14.07	18.12	22.32		26.54	30.89	35.34	39.98	44.75		50.00	/ 1			
reaction time		interval		3.90	4.00	4.05	4.20		4.22	4.35	4.45	4.64	4.77	5.25			11.95	12.77	13.86
		velocity	7.29	8.97	8.75	8.64	8.33		8.29	8.05	7.87	7.54	7.34	7.62	8.00		8.79	8.22	7.58
H1 lead leg		strides		14	14	14	14		14	14	14	14	15		127				
Tateno, Tetsuya (JPN) (1991)		time	6.14	10.04	13.96	17.95	21.99		26.24	30.64	35.13	39.78	44.62		50.15	/ 2			
reaction time		interval		3.90	3.92	3.99	4.04		4.25	4.40	4.49	4.65	4.84	5.53			11.81	12.69	13.98
		velocity	7.33	8.97	8.93	8.77	8.66		8.24	7.95	7.80	7.53	7.23	7.23	7.98		8.89	8.27	7.51
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

D FINAL

date 03-May-12

Yasunori (2013) - race pattern analysis for the top Japanese 400m hurdlers in major domestic competitions

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kino, Tomoharu (JPN) (1987		time	6.07	9.92	13.87	17.87	21.97		26.26	30.68	35.28	40.07	44.83		50.08	/ 1			
reaction time		interval		3.85	3.95	4.00	4.10		4.29	4.42	4.60	4.79	4.76	5.25			11.80	12.81	14.15
		velocity	7.41	9.09	8.86	8.75	8.54		8.16	7.92	7.61	7.31	7.35	7.62	7.99		8.90	8.20	7.42
H1 lead leg		strides		13	13	13	14		14	15	15	15	15		127				

2011 Chinese National Championships (Hefei, CHN)

FINAL

date 09-Sep-11

Li (2008) - research on training characteristics of Li Zhilong's of Chinese men's 400m hurdles

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Zhilong (CHN) (1988)		time	6.08	9.92	13.92	17.92	22.04		26.36	30.68	35.08	39.60	44.20		49.47	/ 1			
reaction time		interval		3.84	4.00	4.00	4.12		4.32	4.32	4.40	4.52	4.60	5.27	PB		11.84	12.76	13.52
		velocity	7.40	9.11	8.75	8.75	8.50		8.10	8.10	7.95	7.74	7.61	7.59	8.09		8.87	8.23	7.77
H1 lead leg		strides	22	15	15	15	15		15	15	15	15	15	18	175				

2011 IAAF World Championships (Daegu, KOR)

FINAL

date 01-Sep-11

Behm (2011) - Le quatrache: Démus enfin!

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1		time	5.9	9.6	13.3	17.2	21.1		25.2	29.4	33.8	38.3	42.9		48.26	6 / 1			
reaction time	0.153	interval		3.7	3.7	3.9	3.9		4.1	4.2	4.4	4.5	4.6	5.4			11.30	12.20	13.50
		velocity	7.63	9.46	9.46	8.97	8.97		8.54	8.33	7.95	7.78	7.61	7.46	8.29		9.29	8.61	7.78
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	18.5	169.5				
Culson, Javier (PUR) (1984)		time	5.8	9.4	13.1	16.9	20.9		24.9	29.2	33.5	38.1	42.8		48.44	3 / 2			
reaction time	0.190	interval		3.6	3.7	3.8	4.0		4.0	4.3	4.3	4.6	4.7	5.6			11.10	12.30	13.60
		velocity	7.76	9.72	9.46	9.21	8.75		8.75	8.14	8.14	7.61	7.45	7.09	8.26		9.46	8.54	7.72
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	18	157				
van Zyl, LJ (RSA) (1985)		time	5.8	9.5	13.1	17.0	21.0		24.9	29.1	33.5	38.1	43.0		48.80	8 / 3			
reaction time	0.177	interval		3.7	3.6	3.9	4.0		3.9	4.2	4.4	4.6	4.9	5.8			11.20	12.10	13.90
		velocity	7.76	9.46	9.72	8.97	8.75		8.97	8.33	7.95	7.61	7.14	6.90	8.20		9.38	8.68	7.55
H1 lead leg	L	strides	21	14	14	14	14		14	15	15	16	16	20	173				
Sańchez, Félix (DOM) (1977)		time	5.8	9.5	13.1	16.9	21.0		25.1	29.3	33.7	38.3	43.3		48.87	7 / 4			
reaction time	0.179	interval		3.7	3.6	3.8	4.1		4.1	4.2	4.4	4.6	5.0	5.6			11.10	12.40	14.00
		velocity	7.76	9.46	9.72	9.21	8.54		8.54	8.33	7.95	7.61	7.00	7.18	8.18		9.46	8.47	7.50
H1 lead leg	R	strides	20	13	13	13	13		14	14	15	15	16	19	165				
Fredericks, Cornel (RSA) (19		time	5.8	9.5	13.3	17.2	21.3		25.3	29.5	34.0	38.6	43.4		49.12	4 / 5			
reaction time	0.170	interval		3.7	3.8	3.9	4.1		4.0	4.2	4.5	4.6	4.8	5.7			11.40	12.30	13.90
		velocity	7.76	9.46	9.21	8.97	8.54		8.75	8.33	7.78	7.61	7.29	6.99	8.14		9.21	8.54	7.55
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	16	16	20	174				
Jackson, Bershawn (USA) (1		time	5.7	9.3	13.3	17.2	21.2		25.4	29.6	33.8	38.4	43.3		49.24	5 / 6			
reaction time	0.151	interval		3.6	4.0	3.9	4.0		4.2	4.2	4.2	4.6	4.9	5.9			11.50	12.40	13.70
		velocity	7.89	9.72	8.75	8.97	8.75		8.33	8.33	8.33	7.61	7.14	6.73	8.12		9.13	8.47	7.66
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	17	20	179				
Taylor, Angelo (USA) (1978)		time	5.8	9.4	13.0	16.7	20.7		24.8	29.1	33.6	38.3	43.2		49.31	1 / 7			
reaction time	0.150	interval		3.6	3.6	3.7	4.0		4.1	4.3	4.5	4.7	4.9	6.1			10.90	12.40	14.10
		velocity	7.76	9.72	9.72	9.46	8.75		8.54	8.14	7.78	7.45	7.14	6.55	8.11		9.63	8.47	7.45
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	16	19	166				
Derevyagin, Aleksandr (RUS		time	6.0	9.7	13.7	17.6	21.6		25.8	30.2	34.6	39.0	43.7		49.32	2 / 8			
reaction time	0.187	interval		3.7	4.0	3.9	4.0		4.2	4.4	4.4	4.4	4.7	5.6			11.60	12.60	13.50
		velocity	7.50	9.46	8.75	8.97	8.75		8.33	7.95	7.95	7.95	7.45	7.12	8.11		9.05	8.33	7.78
H1 lead leg	L	strides	22	15	15	16	15		15	15	15	15	15	18	176				

Heat 1

date 29-Aug-11

Beck (2011) - 400-meter-hürdensprinter im aufschwung

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Fleischhauer, Georg (GER) (		time	6.16	9.96	13.84	17.78	21.77		25.85	30.08	34.48	38.96	43.52		48.72	4 / 3			
reaction time	0.176	interval		3.80	3.88	3.94	3.99		4.08	4.23	4.40	4.48	4.56	5.20	PB		11.62	12.30	13.44
		velocity	7.31	9.21	9.02	8.88	8.77		8.58	8.27	7.95	7.81	7.68	7.69	8.21		9.04	8.54	7.81
H1 lead leg		strides	21	13	13	13	13		13	13	14	14	14		141				

2011 Japanese National High School Championships (Kitakami, JPN)

FINAL

date 05-Aug-11

Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics data collection

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Okada, Sohei (JPN) (1993)		time	6.15	10.17	14.27	18.44	22.60		26.86	31.44	36.26	41.26	46.26		51.72	7 / 1			
reaction time		interval		4.02	4.10	4.17	4.16		4.26	4.58	4.82	5.00	5.00	5.46			12.29	13.00	14.82
		velocity	7.32	8.71	8.54	8.39	8.41		8.22	7.64	7.26	7.00	7.00	7.33	7.73		8.54	8.08	7.09
H1 lead leg		strides																	
Matsumoto, Takahiro (JPN)		time	6.22	10.40	14.69	19.02	23.37		27.77	32.19	36.82	41.71	46.74		52.34	6 / 2			
reaction time		interval		4.18	4.29	4.33	4.35		4.40	4.42	4.63	4.89	5.03	5.60			12.80	13.17	14.55
		velocity	7.23	8.37	8.16	8.08	8.05		7.95	7.92	7.56	7.16	6.96	7.14	7.64		8.20	7.97	7.22
H1 lead leg		strides																	

Sato, Yota (JPN) (1992)		time	6.22	10.24	14.40	18.62	22.85	27.24	31.79	36.64	41.84	47.06		52.48	8 / 3			
reaction time		interval		4.02	4.16	4.22	4.23	4.39	4.55	4.85	5.20	5.22	5.42			12.40	13.17	15.27
		velocity	7.23	8.71	8.41	8.29	8.27	7.97	7.69	7.22	6.73	6.70	7.38	7.62		8.47	7.97	6.88
H1 lead leg		strides																

2011 German National Championship (Kassel, GER)

FINAL date 24-Jul-11

Beck (2011) - 400-meter-hürdensprinter im aufschwung

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Gollnow, David (GER) (1989)		time	6.26	10.12	13.94	17.80	21.81		25.96	30.34	34.93	39.62	44.35		49.56	6 / 1			
reaction time	0.175	interval		3.86	3.82	3.86	4.01		4.15	4.38	4.59	4.69	4.73	5.21			11.54	12.54	14.01
		velocity	7.19	9.07	9.16	9.07	8.73		8.43	7.99	7.63	7.46	7.40	7.68	8.07		9.10	8.37	7.49
H1 lead leg		strides	21	13	13	13	13		13	14	14	15	15		144				

2011 European U23 Championships (Ostrava, CZE)

FINAL date 16-Jul-11

Beck (2011) - 400-meter-hürdensprinter im aufschwung

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Gollnow, David (GER) (1989)		time	6.22	10.16	14.19	18.16	22.30		26.62	31.02	35.54	40.20	44.84		49.97	2 / 6			
reaction time	0.201	interval		3.94	4.03	3.97	4.14		4.32	4.40	4.52	4.66	4.64	5.13			11.94	12.86	13.82
		velocity	7.23	8.88	8.68	8.82	8.45		8.10	7.95	7.74	7.51	7.54	7.80	8.00		8.79	8.16	7.60
H1 lead leg		strides	21	13	13	13	13		14	14	14	15	15		145				

2011 Asian Championships (Kobe, JPN)

FINAL date 09-Jul-11

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	6.03	9.75	13.55	17.44	21.39		25.56	29.86	34.38	39.20	44.05		49.64	/ 1			
reaction time	0.168	interval		3.72	3.80	3.89	3.95		4.17	4.30	4.52	4.82	4.85	5.59			11.41	12.42	14.19
		velocity	7.46	9.41	9.21	9.00	8.86		8.39	8.14	7.74	7.26	7.22	7.16	8.06		9.20	8.45	7.40
H1 lead leg		strides		13	13	13	13		14	14	14	16	15		125				

2011 DLV Junioren-Gala (Mannheim, GER)

FINAL date 03-Jul-11

Beck (2011) - 400-meter-hürdensprinter im aufschwung

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Königsmark, Varg (GER) (19		time	6.12	10.02	14.06	18.10	22.22		26.44	30.74	35.22	39.97	44.86		50.46	/ 1			
reaction time		interval		3.90	4.04	4.04	4.12		4.22	4.30	4.48	4.75	4.89	5.60			11.98	12.64	14.12
		velocity	7.35	8.97	8.66	8.66	8.50		8.29	8.14	7.81	7.37	7.16	7.14	7.93		8.76	8.31	7.44
H1 lead leg		strides	20	13	13	13	13		13	14	14	15	15		143				

2011 Weltklasse in Biberach (Biberach, GER)

FINAL date 28-Jun-11

Beck (2011) - 400-meter-hürdensprinter im aufschwung

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Fleischhauer, Georg (GER) (		time	6.30	10.16	14.06	18.02	22.04		26.26	30.58	35.00	39.64	44.26		49.50	/ 2			
reaction time		interval		3.86	3.90	3.96	4.02		4.22	4.32	4.42	4.64	4.62	5.24			11.72	12.56	13.68
		velocity	7.14	9.07	8.97	8.84	8.71		8.29	8.10	7.92	7.54	7.58	7.63	8.08		8.96	8.36	7.68
H1 lead leg		strides	20	13	13	13	13		13	13	13	14	14		139				

2011 German National Junior Championship (Bremen, GER)

FINAL date 26-Jun-11

Beck (2011) - 400-meter-hürdensprinter im aufschwung

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Königsmark, Varg (GER) (19		time	6.22	10.12	14.14	18.21	22.40		26.84	31.38	35.98	40.54	45.18		50.24	/ 1			
reaction time		interval		3.90	4.02	4.07	4.19		4.44	4.54	4.60	4.56	4.64	5.06			11.99	13.17	13.80
		velocity	7.23	8.97	8.71	8.60	8.35		7.88	7.71	7.61	7.68	7.54	7.91	7.96		8.76	7.97	7.61
H1 lead leg		strides	20	13	13	13	13		14	14	14	14	14		142				

2011 Chinese National Grand Prix (Fuzhou, CHN)

FINAL date 26-Jun-11

Li (2008) - research on training characteristics of Li Zhilong's of Chinese men's 400m hurdles

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Li Zhilong (CHN) (1988)		time	6.08	9.88	13.84	17.80	21.88		26.16	30.48	35.04	39.68	44.48		49.58	/ 2			
reaction time		interval		3.80	3.96	3.96	4.08		4.28	4.32	4.56	4.64	4.80	5.10	**PB**		11.72	12.68	14.00
		velocity	7.40	9.21	8.84	8.84	8.58		8.18	8.10	7.68	7.54	7.29	7.84	8.07		8.96	8.28	7.50
H1 lead leg		strides																	

2011 Poks Memorial (Hässleholm, SWE)

FINAL date 12-Jun-11

Blomkvist (2011) - www.elitlandslag.se/SprintHäck/LängSprintHäck.aspx

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Carbe, Jonathan (SWE) (199		time	6.44	10.58	14.84	19.26	23.70		28.42	33.16	37.94	42.94	47.94		53.59	/ 1			
reaction time		interval		4.14	4.26	4.42	4.44		4.72	4.74	4.78	5.00	5.00	5.65			12.82	13.90	14.78
		velocity	6.99	8.45	8.22	7.92	7.88		7.42	7.38	7.32	7.00	7.00	7.08	7.46		8.19	7.55	7.10
H1 lead leg	L	strides		14	14	14	14		15	15	15	15	15	19	150				
Christensson, Jim (SWE) (19		time	6.60	10.90	15.36	19.80	24.28		28.84	33.44	38.16	43.16	48.16		53.73	/ 2			
reaction time		interval		4.30	4.46	4.44	4.48		4.56	4.60	4.72	5.00	5.00	5.57			13.20	13.64	14.72
		velocity	6.82	8.14	7.85	7.88	7.81		7.68	7.61	7.42	7.00	7.00	7.18	7.44		7.95	7.70	7.13
H1 lead leg	L	strides		15	15	15	15		15	15	15	16	16	19	156				
Nilsson, Anton (SWE) (1992)		time	6.42	10.52	14.82	19.14	23.66		28.24	33.02	37.88	42.90	48.24		54.22	/ 3			
reaction time		interval		4.10	4.30	4.32	4.52		4.58	4.78	4.86	5.02	5.34	5.98			12.72	13.88	15.22

		velocity	7.01	8.54	8.14	8.10	7.74	7.64	7.32	7.20	6.97	6.55	6.69	7.38			8.25	7.56	6.90
H1 lead leg	L	strides		14	14	14	14	14	15	15	15	16	19	150					
Forsberg, Anton (SWE) (199		time		10.76	15.06	19.36	23.78		33.10	37.88	42.84	48.08		54.40		/ 4			
reaction time		interval			4.30	4.30	4.42		9.32	4.78	4.96	5.24	6.32	PB				13.74	14.98
		velocity		7.43	8.14	8.14	7.92		7.51	7.32	7.06	6.68	6.33	7.35				7.64	7.01
H1 lead leg	R	strides		14	14	14	14	15	15	15	15	15	19	150					

2011 Japanese National Championships (Kumagaya, JPN)

FINAL

date 11-Jun-11

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (	time	5.94	9.74	13.63	17.62	21.81		25.91	30.21	34.63	39.23	43.92		49.28	/ 1			
reaction time	interval		3.80	3.89	3.99	4.19		4.10	4.30	4.42	4.60	4.69	5.36			11.68	12.59	13.71
	velocity	7.58	9.21	9.00	8.77	8.35		8.54	8.14	7.92	7.61	7.46	7.46	8.12		8.99	8.34	7.66
H1 lead leg	strides		13	13	13	14		14	14	14	15	15		125				
Imazeki, Yuta (JPN) (1987)	time	6.21	10.15	14.19	18.21	22.26		26.33	30.53	34.93	39.52	44.22		49.61	/ 2			
reaction time	interval		3.94	4.04	4.02	4.05		4.07	4.20	4.40	4.59	4.70	5.39			12.00	12.32	13.69
	velocity	7.25	8.88	8.66	8.71	8.64		8.60	8.33	7.95	7.63	7.45	7.42	8.06		8.75	8.52	7.67
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				
Abe, Takatoshi (JPN) (1991)	time	6.19	10.08	14.02	18.02	22.14		26.41	30.71	35.20	39.74	44.41		49.81	/ 3			
reaction time	interval		3.89	3.94	4.00	4.12		4.27	4.30	4.49	4.54	4.67	5.40			11.83	12.69	13.70
	velocity	7.27	9.00	8.88	8.75	8.50		8.20	8.14	7.80	7.71	7.49	7.41	8.03		8.88	8.27	7.66
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Ideura, Noriuki (JPN) (1987)	time	6.27	10.24	14.24	18.29	22.44		26.66	30.98	35.40	39.92	44.57		49.87	/ 4			
reaction time	interval		3.97	4.00	4.05	4.15		4.22	4.32	4.42	4.52	4.65	5.30	PB		12.02	12.69	13.59
	velocity	7.18	8.82	8.75	8.64	8.43		8.29	8.10	7.92	7.74	7.53	7.55	8.02		8.74	8.27	7.73
H1 lead leg	strides		14	14	14	14		14	15	15	15	15		130				

2011 Friidrott (Stockholm, SWE)

FINAL

date 07-Jun-11

Blomkvist (2011) - www.elitlandslag.se/SprintHäck/LängSprintHäck.aspx

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Bäckman, Mattias (SWE) (19	time	6.72	11.00	15.44	19.78	24.34		29.02	33.90	38.66	43.90	49.04		54.66	/ 1			
reaction time	interval		4.28	4.44	4.34	4.56		4.68	4.88	4.76	5.24	5.14	5.62			13.06	14.12	15.14
	velocity	6.70	8.18	7.88	8.06	7.68		7.48	7.17	7.35	6.68	6.81	7.12	7.32		8.04	7.44	6.94
H1 lead leg	L strides		15	15	15	15		15	15	15	15	15	19	154				
Nilsson, Anton (SWE) (1992)	time	6.40	10.60	14.84	19.14	23.56		28.16	32.86	37.78	43.20	48.62		54.86	/ 2			
reaction time	interval		4.20	4.24	4.30	4.42		4.60	4.70	4.92	5.42	5.42	6.24			12.74	13.72	15.76
	velocity	7.03	8.33	8.25	8.14	7.92		7.61	7.45	7.11	6.46	6.46	6.41	7.29		8.24	7.65	6.66
H1 lead leg	L strides		14	14	14	14		14	15	15	16	16	19	151				
Sjöstedt, Carl (SWE) (84 cm)	time	6.80	11.20	15.58	20.10	24.74		29.54	34.54	39.58	44.86	50.08		55.82	/ 3			
reaction time	interval		4.40	4.38	4.52	4.64		4.80	5.00	5.04	5.28	5.22	5.74			13.30	14.44	15.54
	velocity	6.62	7.95	7.99	7.74	7.54		7.29	7.00	6.94	6.63	6.70	6.97	7.17		7.89	7.27	6.76
H1 lead leg	L strides		15	15	15	15		15	16	16	17	17	19	160				
Widlund, Hampus (SWE) (19	time	6.72	11.10	15.64	20.24	24.94		29.74	34.82	39.96	45.28	50.84		57.57	/ 4			
reaction time	interval		4.38	4.54	4.60	4.70		4.80	5.08	5.14	5.32	5.56	6.73			13.52	14.58	16.02
	velocity	6.70	7.99	7.71	7.61	7.45		7.29	6.89	6.81	6.58	6.29	5.94	6.95		7.77	7.20	6.55
H1 lead leg	R strides		14	14	14	14		15		15	15	17	19	137				

2011 Shizuoka International Athletics Meeting (Fukuroi, JPN)

Race A

date 03-May-11

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (	time	5.97	9.76	13.66	17.66	21.85		26.09	30.38	34.75	39.35	43.96		49.27	/ 2			
reaction time	interval		3.79	3.90	4.00	4.19		4.24	4.29	4.37	4.60	4.61	5.31	PB		11.69	12.72	13.58
	velocity	7.54	9.23	8.97	8.75	8.35		8.25	8.16	8.01	7.61	7.59	7.53	8.12		8.98	8.25	7.73
H1 lead leg	strides		13	13	13	14		14	14	14	15	15		125				
Imazeki, Yuta (JPN) (1987)	time	6.21	10.16	14.13	18.17	22.32		26.56	30.85	35.29	39.84	44.46		49.71	/ 3			
reaction time	interval		3.95	3.97	4.04	4.15		4.24	4.29	4.44	4.55	4.62	5.25			11.96	12.68	13.61
	velocity	7.25	8.86	8.82	8.66	8.43		8.25	8.16	7.88	7.69	7.58	7.62	8.05		8.78	8.28	7.71
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				

Race B

date 03-May-11

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)	time	6.03	9.77	13.71	17.75	21.84		26.06	30.40	34.94	39.63	44.40		49.89	/ 1			
reaction time	interval		3.74	3.94	4.04	4.09		4.22	4.34	4.54	4.69	4.77	5.49			11.72	12.65	14.00
	velocity	7.46	9.36	8.88	8.66	8.56		8.29	8.06	7.71	7.46	7.34	7.29	8.02		8.96	8.30	7.50
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				

2010 Commonwealth Games (Dehli, IND)

FINAL

date 10-Oct-10

Arnold (2010) - 400mH planning and peaking

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1	time	6.1	9.9	13.7	17.7	21.7	23.5	25.9	30.1	34.4	38.9	43.5		48.52	6 / 1			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.163	interval		3.8	3.8	4.0	4.0		4.2	4.2	4.3	4.5	4.6	5.02			11.60	12.40	13.40
		velocity	7.38	9.21	9.21	8.75	8.75	8.51	8.33	8.33	8.14	7.78	7.61	7.97	8.24		9.05	8.47	7.84
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	19	170				
van Zyl, LJ (RSA) (1985)		0.201	no information available												48.63	7 / 2			
Williams, Rhys (GBR) (1984)		time	6.2	10.2	14.2	18.3	22.5	24.3	26.8	31.1	35.4	39.9	44.2		49.19	5 / 3			
reaction time	0.214	interval		4.0	4.0	4.1	4.2		4.3	4.3	4.3	4.5	4.3	4.99			12.10	12.80	13.10
		velocity	7.26	8.75	8.75	8.54	8.33	8.23	8.14	8.14	8.14	7.78	8.14	8.02	8.13		8.68	8.20	8.02
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15	18.5	170.5				
Kosgei, Vincent (KEN) (1985		0.225	no information available											PB	49.36	9 / 4			
Yates, Richard (GBR) (1986)		time	6.2	10.1	14.1	18.2	22.4		26.5	30.9	35.3	39.8	44.5		49.84	4 / 5			
reaction time	0.225	interval		3.9	4.0	4.1	4.2		4.1	4.4	4.4	4.5	4.7	5.34			12.00	12.70	13.60
		velocity	7.26	8.97	8.75	8.54	8.33		8.54	7.95	7.95	7.78	7.45	7.49	8.03		8.75	8.27	7.72
H1 lead leg	R	strides	21	14	14	14	14		14	14	14	15	15	18	167				
Cole, Brendan (AUS) (1981)		0.221	no information available												50.14	8 / 6			
Findlay, Adrian (JAM) (1982)		0.169	no information available												50.48	3 / 7			
Hughes, David (GBR) (1984)		time	6.0	9.9	13.7	17.8	21.9	23.7	26.1	30.6	35.3	40.1	44.9		50.48	2 / 8			
reaction time	0.170	interval		3.9	3.8	4.1	4.1		4.2	4.5	4.7	4.8	4.8	5.58			11.78	12.82	14.30
		velocity	7.50	8.97	9.21	8.58	8.50	8.44	8.33	7.78	7.45	7.29	7.29	7.17	7.92		8.91	8.19	7.34
H1 lead leg	R	strides	20	13	13	13	13		13	13	15	15	15	17.7	160.7				

Heat 3

date 09-Oct-10

Arnold (2010) - 400mH planning and peaking

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Yates, Richard (GBR) (1986)		time	6.0	9.9	13.8	17.9	22.1	23.9	26.3	30.6	35.0	39.6	44.3		49.83	5 / 1			
reaction time	0.233	interval		3.9	3.9	4.1	4.2		4.2	4.3	4.4	4.6	4.7	5.53			11.90	12.70	13.70
		velocity	7.50	8.97	8.97	8.54	8.33	8.37	8.33	8.14	7.95	7.61	7.45	7.23	8.03		8.82	8.27	7.66
H1 lead leg		strides																	

Heat 2

date 09-Oct-10

Arnold (2010) - 400mH planning and peaking

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1		time	6.1	10.0	14.0	18.0	22.3	24.1	26.6	30.9	35.4	40.0	44.6		49.98	4 / 1			
reaction time	0.177	interval		3.9	4.0	4.0	4.3		4.3	4.3	4.5	4.6	4.6	5.38			11.90	12.90	13.70
		velocity	7.38	8.97	8.75	8.75	8.14	8.30	8.14	8.14	7.78	7.61	7.61	7.43	8.00		8.82	8.14	7.66
H1 lead leg		strides																	

Heat 1

date 09-Oct-10

Arnold (2010) - 400mH planning and peaking

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Williams, Rhys (GBR) (1984)		time	6.1	10.1	14.1	18.1	22.2	24.0	26.4	30.7	35.3	39.9	44.4		49.81	4 / 1			
reaction time	0.209	interval		4.0	4.0	4.0	4.1		4.2	4.3	4.6	4.6	4.5	5.41			12.00	12.60	13.70
		velocity	7.38	8.75	8.75	8.75	8.54	8.33	8.33	8.14	7.61	7.61	7.78	7.39	8.03		8.75	8.33	7.66
H1 lead leg		strides																	
Hughes, David (GBR) (1984)		time	5.9	9.8	13.8	17.8	21.9	23.7	26.2	30.6	35.2	40.0	44.8		50.55	6 / 3			
reaction time	0.180	interval		3.9	4.0	4.0	4.1		4.3	4.4	4.6	4.8	4.8	5.75			11.90	12.80	14.20
		velocity	7.63	8.97	8.75	8.75	8.54	8.44	8.14	7.95	7.61	7.29	7.29	6.96	7.91		8.82	8.20	7.39
H1 lead leg		strides																	

2010 Japanese National High School Championships (Okinawa, JPN)

FINAL

date 31-Jul-10

Matsuo (2010) - 63rd high school championships: JAF scientific committee - biomechanics data collection

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kato, Seiya (JPN) (1992)		time	6.37	10.32	14.27	18.24	22.41		26.63	30.98	35.62	40.46	45.45		51.04	/ 1			
reaction time		interval		3.95	3.95	3.97	4.17		4.22	4.35	4.64	4.84	4.99	5.59			11.87	12.74	14.47
		velocity	7.06	8.86	8.86	8.82	8.39		8.29	8.05	7.54	7.23	7.01	7.16	7.84		8.85	8.24	7.26
H1 lead leg		strides		13	13	13	14		14	15	15	15	15		127				
Nagano, Yuichi (JPN) (1993)		time	6.44	10.41	14.45	18.52	22.67		26.97	31.37	35.91	40.90	46.09		52.03	/ 2			
reaction time		interval		3.97	4.04	4.07	4.15		4.30	4.40	4.54	4.99	5.19	5.94			12.08	12.85	14.72
		velocity	6.99	8.82	8.66	8.60	8.43		8.14	7.95	7.71	7.01	6.74	6.73	7.69		8.69	8.17	7.13
H1 lead leg		strides		13	13	13	13		14	14	14	15	15		124				
Chiba, Yuto (JPN) (1992)		time	6.37	10.37	14.46	18.61	22.86		27.25	31.82	36.61	41.70	46.87		52.47	/ 3			
reaction time		interval		4.00	4.09	4.15	4.25		4.39	4.57	4.79	5.09	5.17	5.60			12.24	13.21	15.05
		velocity	7.06	8.75	8.56	8.43	8.24		7.97	7.66	7.31	6.88	6.77	7.14	7.62		8.58	7.95	6.98
H1 lead leg		strides		15	15	15	15		15	15	15	16	16		137				

2010 European Championships (Barcelona, ESP)

Behm (2010) - les haies bases

FINAL

date 31-Jul-10

Arnold (2010) - 400mH planning and peaking

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1		time	6.08	9.86	13.70	17.56	21.52		25.54	29.70	33.96	38.38	42.96		48.12	3 / 1			*Arnold (2010)*
reaction time	0.175	interval		3.78	3.84	3.86	3.96		4.02	4.16	4.26	4.42	4.58	5.16			11.48	12.14	13.26
		velocity	7.40	9.26	9.11	9.07	8.84		8.71	8.41	8.22	7.92	7.64	7.75	8.31		9.15	8.65	7.92
H1 lead leg	R	strides	21	14	14	14	14		14	15	15	15	15	19	170				
Williams, Rhys (GBR) (1984)		time	6.20	10.06	13.96	17.78	21.72		25.72	29.86	34.12	38.62	43.36		48.96	5 / 2			*Arnold (2010)*

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

	reaction time	0.195	interval		3.86	3.90	3.82	3.94		4.00	4.14	4.26	4.50	4.74	5.60	PB		11.58	12.08	13.50
			velocity	7.26	9.07	8.97	9.16	8.88		8.75	8.45	8.22	7.78	7.38	7.14	8.17		9.07	8.69	7.78
	H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15	19.5	171.5				
Melnykov, Stanislav (UKR) (			time	6.1	9.9	13.7	17.5	21.5		25.7	29.9	34.4	39.0	43.7		49.09	6 / 3		*Behm (2010)*	
	reaction time	0.314	interval		3.8	3.8	3.8	4.0		4.2	4.2	4.5	4.6	4.7	5.4			11.40	12.40	13.80
			velocity	7.38	9.21	9.21	9.21	8.75		8.33	8.33	7.78	7.61	7.45	7.42	8.15		9.21	8.47	7.61
	H1 lead leg	R	strides	21	13	13	13	14		14	14	14	15	15	18	164				
Kechi, Heni (FRA) (1980)			time	6.1	10.0	14.0	18.1	22.3		26.5	30.7	35.0	39.4	44.0		49.34	7 / 4		*Behm (2010)*	
	reaction time	0.186	interval		3.9	4.0	4.1	4.2		4.2	4.2	4.3	4.4	4.6	5.3			12.00	12.60	13.30
			velocity	7.38	8.97	8.75	8.54	8.33		8.33	8.33	8.14	7.95	7.61	7.49	8.11		8.75	8.33	7.89
	H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	19.5	176.5				
Iakovakis, Periklis (GRE) (197		0.225	no information available													49.38	1 / 5			
Prokok, Josef (CZE) (1987)		0.217	no information available												PB	49.68	2 / 6			
Derevyagin, Aleksandr (RUS		0.200	no information available													49.70	4 / 7			
Bellaabouss, Fadil (FRA) (19			time	6.2	10.3	14.5										62.94	8 / 8		*Behm (2010)*	
	reaction time	0.180	interval		4.1	4.2														
			velocity	7.26	8.54	8.33										6.36				
	H1 lead leg	L	strides	21	14	14										49				

Semi-Final 2

date 29-Jul-10 — *Arnold (2010) - 400mH planning and peaking*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Williams, Rhys (GBR) (1984)		time	6.32	10.18	14.08	18.14	22.28		26.48	30.80	35.20	39.72	44.40		49.61	4 / 1			
	reaction time	0.223	interval		3.86	3.90	4.06	4.14		4.20	4.32	4.40	4.52	4.68	5.21			11.82	12.66	13.60
			velocity	7.12	9.07	8.97	8.62	8.45		8.33	8.10	7.95	7.74	7.48	7.68	8.06		8.88	8.29	7.72
	H1 lead leg	R	strides																	

Semi-Final 1

date 29-Jul-10 — *Arnold (2010) - 400mH planning and peaking*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1		time	6.10	9.84	13.72	17.62	21.68		25.86	30.18	34.70	39.32	44.02		49.48	3 / 1			
	reaction time	0.225	interval		3.74	3.88	3.90	4.06		4.18	4.32	4.52	4.62	4.70	5.46			11.52	12.56	13.84
			velocity	7.38	9.36	9.02	8.97	8.62		8.37	8.10	7.74	7.58	7.45	7.33	8.08		9.11	8.36	7.59
	H1 lead leg	R	strides																	
Woodward, Nathan (GBR) (			time		9.96	13.86	17.86	21.86		26.06	30.38	34.90	39.72	44.70		50.51	7 / 4			
	reaction time	0.214	interval			3.90	4.00	4.00		4.20	4.32	4.52	4.82	4.98	5.81				12.52	14.32
			velocity		8.03	8.97	8.75	8.75		8.33	8.10	7.74	7.26	7.03	6.88	7.92			8.39	7.33
	H1 lead leg	L	strides																	

Heat 4

date 28-Jul-10 — *Arnold (2010) - 400mH planning and peaking*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1		time	6.22	10.04	13.94	17.84	21.88		26.08	30.46	34.90	39.56	44.40		50.11	4 / 1			
	reaction time	0.189	interval		3.82	3.90	3.90	4.04		4.20	4.38	4.44	4.66	4.84	5.71			11.62	12.62	13.94
			velocity	7.23	9.16	8.97	8.97	8.66		8.33	7.99	7.88	7.51	7.23	7.01	7.98		9.04	8.32	7.53
	H1 lead leg	R	strides																	

Heat 2

date 28-Jul-10 — *Arnold (2010) - 400mH planning and peaking*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Williams, Rhys (GBR) (1984)		time	6.22	10.00	13.82	17.68	21.72		25.90	30.26	34.76	39.42	44.16		49.35	5 / 1			
	reaction time	0.208	interval		3.78	3.82	3.86	4.04		4.18	4.36	4.50	4.66	4.74	5.19			11.46	12.58	13.90
			velocity	7.23	9.26	9.16	9.07	8.66		8.37	8.03	7.78	7.51	7.38	7.71	8.11		9.16	8.35	7.55
	H1 lead leg	R	strides																	

Heat 1

date 28-Jul-10 — *Arnold (2010) - 400mH planning and peaking*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Woodward, Nathan (GBR) (		time	6.22	10.14	14.16	18.16	22.30		26.54	30.88	35.32	40.06	45.02		50.45	8 / 3			
	reaction time	0.187	interval		3.92	4.02	4.00	4.14		4.24	4.34	4.44	4.74	4.96	5.43			11.94	12.72	14.14
			velocity	7.23	8.93	8.71	8.75	8.45		8.25	8.06	7.88	7.38	7.06	7.37	7.93		8.79	8.25	7.43
	H1 lead leg	L	strides																	

2010 Japanese National Championships (Marugume, JPN)

FINAL

date 05-Jun-10 — *Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)		time	6.07	9.86	13.71	17.60	21.59		25.73	30.07	34.51	39.01	43.58		49.01	/ 1			
	reaction time	0.165	interval		3.79	3.85	3.89	3.99		4.14	4.34	4.44	4.50	4.57	5.43			11.53	12.47	13.51
			velocity	7.41	9.23	9.09	9.00	8.77		8.45	8.06	7.88	7.78	7.66	7.37	8.16		9.11	8.42	7.77
	H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				
Kawakita, Naohiro (JPN) (19			time	6.16	10.07	13.98	17.95	22.02		26.31	30.65	35.19	39.78	44.42		49.63	/ 2			
	reaction time	0.169	interval		3.91	3.91	3.97	4.07		4.29	4.34	4.54	4.59	4.64	5.21			11.79	12.70	13.77
			velocity	7.31	8.95	8.95	8.82	8.60		8.16	8.06	7.71	7.63	7.54	7.68	8.06		8.91	8.27	7.63
	H1 lead leg		strides		13	13	13	13		14	14	14	15	15		124				
Koike, Takayuki (JPN) (1984)			time	6.02	9.79	13.71	17.66	21.78		26.03	30.40	34.94	39.51	44.23		49.76	/ 3			
	reaction time	0.197	interval		3.77	3.92	3.95	4.12		4.25	4.37	4.54	4.57	4.72	5.53			11.64	12.74	13.83
			velocity	7.48	9.28	8.93	8.86	8.50		8.24	8.01	7.71	7.66	7.42	7.23	8.04		9.02	8.24	7.59

H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Imazeki, Yuta (JPN) (1987)		time	6.17	10.19	14.36	18.55	22.85		27.20	31.54	35.93	40.36	44.79		49.81	/ 4			
reaction time	0.181	interval		4.02	4.17	4.19	4.30		4.35	4.34	4.39	4.43	4.43	5.02			12.38	12.99	13.25
		velocity	7.29	8.71	8.39	8.35	8.14		8.05	8.06	7.97	7.90	7.90	7.97	8.03		8.48	8.08	7.92
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				

2010 Osaka Grand Prix (Osaka, JPN)

FINAL

date 08-May-10

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Koike, Takayuki (JPN) (1984)		time	6.11	9.91	13.75	17.59	21.59		25.76	30.08	34.53	39.03	43.85		49.42	/ 3			
reaction time		interval		3.80	3.84	3.84	4.00		4.17	4.32	4.45	4.50	4.82	5.57			11.48	12.49	13.77
		velocity	7.36	9.21	9.11	9.11	8.75		8.39	8.10	7.87	7.78	7.26	7.18	8.09		9.15	8.41	7.63
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Imazeki, Yuta (JPN) (1987)		time	6.29	10.26	14.21	18.28	22.42		26.69	31.06	35.60	40.10	44.64		49.77	/ 4			
reaction time		interval		3.97	3.95	4.07	4.14		4.27	4.37	4.54	4.50	4.54	5.13			11.99	12.78	13.58
		velocity	7.15	8.82	8.86	8.60	8.45		8.20	8.01	7.71	7.78	7.71	7.80	8.04		8.76	8.22	7.73
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Kishimoto, Takayuki (JPN) (		time	5.97	9.84	13.85	17.86	22.06		26.28	30.60	35.09	39.71	44.45		49.95	/ 6			
reaction time		interval		3.87	4.01	4.01	4.20		4.22	4.32	4.49	4.62	4.74	5.50			11.89	12.74	13.85
		velocity	7.54	9.04	8.73	8.73	8.33		8.29	8.10	7.80	7.58	7.38	7.27	8.01		8.83	8.24	7.58
H1 lead leg		strides		13	13	13	14		14	15	15	15	15		127				

2010 Shizuoka International Athletics Meeting (Fukuroi, JPN)

Race A

date 03-May-10

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Imazeki, Yuta (JPN) (1987)		time	6.42	10.37	14.41	18.51	22.71		26.96	31.25	35.69	40.21	44.81		50.09	/ 1			
reaction time		interval		3.95	4.04	4.10	4.20		4.25	4.29	4.44	4.52	4.60	5.28			12.09	12.74	13.56
		velocity	7.01	8.86	8.66	8.54	8.33		8.24	8.16	7.88	7.74	7.61	7.58	7.99		8.68	8.24	7.74
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				

2009 IAAF World Championships (Berlin, GER)

FINAL

date 18-Aug-09

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	5.92	9.60	13.32	17.15	21.09		25.26	29.49	33.85	38.35	42.90		47.91	3 / 1			
reaction time	0.176	interval		3.68	3.72	3.83	3.94		4.17	4.23	4.36	4.50	4.55	5.01			11.23	12.34	13.41
		velocity	7.60	9.51	9.41	9.14	8.88		8.39	8.27	8.03	7.78	7.69	7.98	8.35		9.35	8.51	7.83
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	13	16.2	153.2				
Culson, Javier (PUR) (1984)		time	5.97	9.67	13.45	17.37	21.49		25.60	29.87	34.17	38.56	43.03		48.09	8 / 2			
reaction time	0.187	interval		3.70	3.78	3.92	4.12		4.11	4.27	4.30	4.39	4.47	5.06	NR		11.40	12.50	13.16
		velocity	7.54	9.46	9.26	8.93	8.50		8.52	8.20	8.14	7.97	7.83	7.91	8.32		9.21	8.40	7.98
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	16.7	155.7				
Jackson, Bershawn (USA) (1		time	5.76	9.63	13.59	17.71	21.87		26.01	30.17	34.43	38.79	43.22		48.23	5 / 3			
reaction time	0.141	interval		3.87	3.96	4.12	4.16		4.14	4.16	4.26	4.36	4.43	5.01			11.95	12.46	13.05
		velocity	7.81	9.04	8.84	8.50	8.41		8.45	8.41	8.22	8.03	7.90	7.98	8.29		8.79	8.43	8.05
H1 lead leg	L	strides	22	14	14	14	14		15	15	15	15	15	19	172				
Gordon, Jehue (TRI) (1991)		time	6.04	9.76	13.60	17.40	21.32		25.36	29.59	33.96	38.44	43.00		48.26	2 / 4			
reaction time	0.172	interval		3.72	3.84	3.80	3.92		4.04	4.23	4.37	4.48	4.56	5.26	NR		11.36	12.19	13.41
		velocity	7.45	9.41	9.11	9.21	8.93		8.66	8.27	8.01	7.81	7.68	7.60	8.29		9.24	8.61	7.83
H1 lead leg	L	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Iakovákis, Periklís (GRE) (197		time	6.17	9.89	13.67	17.55	21.57		25.71	29.94	34.24	38.63	43.15		48.42	7 / 5			
reaction time	0.189	interval		3.72	3.78	3.88	4.02		4.14	4.23	4.30	4.39	4.52	5.27			11.38	12.39	13.21
		velocity	7.29	9.41	9.26	9.02	8.71		8.45	8.27	8.14	7.97	7.74	7.59	8.26		9.23	8.47	7.95
H1 lead leg	R	strides	21	13	13	13	13		14	14	14	14	15	18.5	162.5				
McFarlane, Danny (JAM) (19		time	6.01	9.70	13.52	17.42	21.40		25.48	29.79	34.09	38.57	43.26		48.65	1 / 6			
reaction time	0.162	interval		3.69	3.82	3.90	3.98		4.08	4.31	4.30	4.48	4.69	5.39			11.41	12.37	13.47
		velocity	7.49	9.49	9.16	8.97	8.79		8.58	8.12	8.14	7.81	7.46	7.42	8.22		9.20	8.49	7.80
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	15	18	161				
Greene, David (Dai) (GBR) (1		time	6.07	9.86	13.71	17.65	21.76		25.93	30.19	34.52	38.92	43.46		48.68	6 / 7			
reaction time	0.148	interval		3.79	3.85	3.94	4.11		4.17	4.26	4.33	4.40	4.54	5.22			11.58	12.54	13.27
		velocity	7.41	9.23	9.09	8.88	8.52		8.39	8.22	8.08	7.95	7.71	7.66	8.22		9.07	8.37	7.91
H1 lead leg	R	strides	22	14	14	14	14		14	15	15	15	15	19	171				
Sańchez, Félix (DOM) (1977)		time	5.88	9.92	13.82	17.78	21.82		26.13	30.43	34.97	39.63	44.35		50.11	4 / 8			
reaction time	0.171	interval		4.04	3.90	3.96	4.04		4.31	4.30	4.54	4.66	4.72	5.76			11.90	12.65	13.92
		velocity	7.65	8.66	8.97	8.84	8.66		8.12	8.14	7.71	7.51	7.42	6.94	7.98		8.82	8.30	7.54
H1 lead leg	L	strides	21	15	13	13	13		14	14	15	15	15		148				

Semi-Final 2

date 16-Aug-09

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Jackson, Bershawn (USA) (1		time	5.74	9.58	13.50	17.61	21.70		25.87	30.04	34.28	38.64	43.09		48.23	5 / 1			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	0.146	interval		3.84	3.92	4.11	4.09	4.17	4.17	4.24	4.36	4.45	5.14			11.87	12.43	13.05
		velocity	7.84	9.11	8.93	8.52	8.56	8.39	8.39	8.25	8.03	7.87	7.78	8.29		8.85	8.45	8.05
H1 lead leg	L	strides	22	14	14			15	15	15	15	15	18.7	143.7				
Greene, David (Dai) (GBR) (1		time	6.05	9.79	13.65	17.51	21.54	25.66	29.94	34.24	38.62	43.10		48.27	4 / 2			
reaction time	0.156	interval		3.74	3.86	3.86	4.03	4.12	4.28	4.30	4.38	4.48	5.17	PB		11.46	12.43	13.16
		velocity	7.44	9.36	9.07	9.07	8.68	8.50	8.18	8.14	7.99	7.81	7.74	8.29		9.16	8.45	7.98
H1 lead leg		strides						14	14	15	15	15	18.7	91.7				
Iakovákis, Periklís (GRE) (197		time	6.09	9.74	13.49	17.35	21.39	25.38	29.66	33.98	38.48	43.22		48.73	3 / 3			
reaction time	0.180	interval		3.65	3.75	3.86	4.04	3.99	4.28	4.32	4.50	4.74	5.51			11.26	12.31	13.56
		velocity	7.39	9.59	9.33	9.07	8.66	8.77	8.18	8.10	7.78	7.38	7.26	8.21		9.33	8.53	7.74
H1 lead leg		strides						14	14	14	14	15	19	90				
Phillips, Isa (JAM) (1984)		time	5.98	9.52	13.19	17.02	20.93	25.04	29.38	33.78	38.48	43.19		48.93	6 / 4			
reaction time	0.238	interval		3.54	3.67	3.83	3.91	4.11	4.34	4.40	4.70	4.71	5.74			11.04	12.36	13.81
		velocity	7.53	9.89	9.54	9.14	8.95	8.52	8.06	7.95	7.45	7.43	6.97	8.17		9.51	8.50	7.60
H1 lead leg	L	strides	21	13	13	13	13	13	14	14	15	14	18.7	161.7				

Semi-Final 1

date 16-Aug-09

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	5.97	9.72	13.44	17.22	21.12		25.24	29.48	33.82	38.28	42.89		48.00	3 / 1			
reaction time	0.158	interval		3.75	3.72	3.78	3.90		4.12	4.24	4.34	4.46	4.61	5.11			11.25	12.26	13.41
		velocity	7.54	9.33	9.41	9.26	8.97		8.50	8.25	8.06	7.85	7.59	7.83	8.33		9.33	8.56	7.83
H1 lead leg		strides							13	13	13	13	13	16	81				
Sańchez, Félix (DOM) (1977)		time	5.93	9.58	13.35	17.20	21.18		25.29	29.56	33.94	38.42	43.02		48.34	1 / 2			
reaction time	0.154	interval		3.65	3.77	3.85	3.98		4.11	4.27	4.38	4.48	4.60	5.32			11.27	12.36	13.46
		velocity	7.59	9.59	9.28	9.09	8.79		8.52	8.20	7.99	7.81	7.61	7.52	8.27		9.32	8.50	7.80
H1 lead leg		strides		13	13	13	13		13	14	14	15	15	18.5	141.5				
Culson, Javier (PUR) (1984)		time	5.91	9.55	13.32	17.22	21.25		25.35	29.56	33.88	38.38	43.06		48.43	5 / 3			
reaction time	0.176	interval		3.64	3.77	3.90	4.03		4.10	4.21	4.32	4.50	4.68	5.37			11.31	12.34	13.50
		velocity	7.61	9.62	9.28	8.97	8.68		8.54	8.31	8.10	7.78	7.48	7.45	8.26		9.28	8.51	7.78
H1 lead leg	L	strides		13	13	13	13		13	13	13	14	14	17	136				
McFarlane, Danny (JAM) (19		time	5.99	9.65	13.40	17.29	21.34		25.46	29.78	34.08	38.54	43.16		48.49	4 / 4			
reaction time	0.161	interval		3.66	3.75	3.89	4.05		4.12	4.32	4.30	4.46	4.62	5.33			11.30	12.49	13.38
		velocity	7.51	9.56	9.33	9.00	8.64		8.50	8.10	8.14	7.85	7.58	7.50	8.25		9.29	8.41	7.85
H1 lead leg	L	strides		13	13	13	13		13	14	14	14	15	17.7	139.7				
Gordon, Jehue (TRI) (1991)		time	6.00	9.68	13.50	17.36	21.39		25.60	29.84	34.22	38.80	43.44		48.77	7 / 5			
reaction time	0.162	interval		3.68	3.82	3.86	4.03		4.21	4.24	4.38	4.58	4.64	5.33			11.36	12.48	13.60
		velocity	7.50	9.51	9.16	9.07	8.68		8.31	8.25	7.99	7.64	7.54	7.50	8.20		9.24	8.41	7.72
H1 lead leg		strides			13	13	13		13	13	13	14	14	17	123				
van Zyl, L.J. (RSA) (1985)		time	5.96	9.70	13.46	17.34	21.36		25.54	29.92	34.30	38.70	43.34		48.80	6 / 6			
reaction time	0.168	interval		3.74	3.76	3.88	4.02		4.18	4.38	4.38	4.40	4.64	5.46			11.38	12.58	13.42
		velocity	7.55	9.36	9.31	9.02	8.71		8.37	7.99	7.99	7.95	7.54	7.33	8.20		9.23	8.35	7.82
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	15	15	19.2	171.2				

Heat 4

date 15-Aug-09

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Greene, David (Dai) (GBR) (1		time	6.16	9.98	13.88	17.93	22.03		26.20	30.44	34.76	39.22	43.64		48.76	7 / 1			
reaction time	0.165	interval		3.82	3.90	4.05	4.10		4.17	4.24	4.32	4.46	4.42	5.12			11.77	12.51	13.20
		velocity	7.31	9.16	8.97	8.64	8.54		8.39	8.25	8.10	7.85	7.92	7.81	8.20		8.92	8.39	7.95
H1 lead leg		strides																	
van Zyl, L.J. (RSA) (1985)		time	5.98	9.79	13.67	17.64	21.66		25.83	30.26	34.78	39.43	44.18		49.48	3 / 2			
reaction time	0.171	interval		3.81	3.88	3.97	4.02		4.17	4.43	4.52	4.65	4.75	5.30			11.66	12.62	13.92
		velocity	7.53	9.19	9.02	8.82	8.71		8.39	7.90	7.74	7.53	7.37	7.55	8.08		9.01	8.32	7.54
H1 lead leg		strides																	
Taylor, Angelo (USA) (1978)		time	6.04	9.75	13.48	17.39	21.46		25.87	30.36	34.88	39.48	44.42		49.64	5 / 4			
reaction time	0.171	interval		3.71	3.73	3.91	4.07		4.41	4.49	4.52	4.60	4.94	5.22			11.35	12.97	14.06
		velocity	7.45	9.43	9.38	8.95	8.60		7.94	7.80	7.74	7.61	7.09	7.66	8.06		9.25	8.10	7.47
H1 lead leg		strides																	

Heat 3

date 15-Aug-09

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	6.07	9.83	13.64	17.49	21.47		25.63	29.89	34.17	38.71	43.33		48.39	5 / 1			
reaction time	0.169	interval		3.76	3.81	3.85	3.98		4.16	4.26	4.28	4.54	4.62	5.06			11.42	12.40	13.44
		velocity	7.41	9.31	9.19	9.09	8.79		8.41	8.22	8.18	7.71	7.58	7.91	8.27		9.19	8.47	7.81
H1 lead leg		strides																	
McFarlane, Danny (JAM) (19		time	6.04	9.76	13.62	17.59	21.65		25.72	29.98	34.26	38.79	43.43		48.65	6 / 2			
reaction time	0.187	interval		3.72	3.86	3.97	4.06		4.07	4.26	4.28	4.53	4.64	5.22			11.55	12.39	13.45
		velocity	7.45	9.41	9.07	8.82	8.62		8.60	8.22	8.18	7.73	7.54	7.66	8.22		9.09	8.47	7.81
H1 lead leg		strides																	

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Gordon, Jehue (TRI) (1991)		time	6.05	9.78	13.53	17.36	21.33	25.55	29.77	34.17	38.91	43.45		48.66	8 / 3			
reaction time	0.173	interval		3.73	3.75	3.83	3.97	4.22	4.22	4.40	4.74	4.54	5.21	NR		11.31	12.41	13.68
		velocity	7.44	9.38	9.33	9.14	8.82	8.29	8.29	7.95	7.38	7.71	7.68	8.22		9.28	8.46	7.68
H1 lead leg		strides																
Sańchez, Félix (DOM) (1977)		time	6.03	9.65	13.42	17.30	21.27	25.46	29.81	34.27	38.89	43.53		48.76	7 / 4			
reaction time	0.172	interval		3.62	3.77	3.88	3.97	4.19	4.35	4.46	4.62	4.64	5.23			11.27	12.51	13.72
		velocity	7.46	9.67	9.28	9.02	8.82	8.35	8.05	7.85	7.58	7.54	7.65	8.20		9.32	8.39	7.65
H1 lead leg		strides																

Heat 2

date 15-Aug-09

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Culson, Javier (PUR) (1984)		time	6.02	9.79	13.60	17.66	21.86		26.13	30.49	34.97	39.47	44.11		49.27	1 / 1			
reaction time	0.212	interval		3.77	3.81	4.06	4.20		4.27	4.36	4.48	4.50	4.64	5.16			11.64	12.83	13.62
		velocity	7.48	9.28	9.19	8.62	8.33		8.20	8.03	7.81	7.78	7.54	7.75	8.12		9.02	8.18	7.71
H1 lead leg		strides																	
Jackson, Bershawn (USA) (1		time	6.14	10.20	14.38	18.60	22.89		27.07	31.28	35.58	40.00	44.44		49.34	2 / 2			
reaction time	0.151	interval		4.06	4.18	4.22	4.29		4.18	4.21	4.30	4.42	4.44	4.90			12.46	12.68	13.16
		velocity	7.33	8.62	8.37	8.29	8.16		8.37	8.31	8.14	7.92	7.88	8.16	8.11		8.43	8.28	7.98
H1 lead leg		strides																	
Yoshida, Kazuaki (JPN) (198		time	6.00	9.79	13.61	17.51	21.55		25.73	30.07	34.49	39.07	43.87		49.45	4 / 3			
reaction time	0.152	interval		3.79	3.82	3.90	4.04		4.18	4.34	4.42	4.58	4.80	5.58	PB		11.51	12.56	13.80
		velocity	7.50	9.23	9.16	8.97	8.66		8.37	8.06	7.92	7.64	7.29	7.17	8.09		9.12	8.36	7.61
H1 lead leg		strides																	

Heat 1

date 15-Aug-09

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Phillips, Isa (JAM) (1984)		time	6.05	9.66	13.33	17.18	21.19		25.38	29.79	34.23	38.85	43.55		48.99	8 / 1			
reaction time	0.224	interval		3.61	3.67	3.85	4.01		4.19	4.41	4.44	4.62	4.70	5.44			11.13	12.61	13.76
		velocity	7.44	9.70	9.54	9.09	8.73		8.35	7.94	7.88	7.58	7.45	7.35	8.16		9.43	8.33	7.63
H1 lead leg		strides																	
Iakovákis, Periklís (GRE) (197		time	6.13	9.87	13.68	17.52	21.43		25.53	29.80	34.14	38.74	43.53		49.12	4 / 2			
reaction time	0.179	interval		3.74	3.81	3.84	3.91		4.10	4.27	4.34	4.60	4.79	5.59			11.39	12.28	13.73
		velocity	7.34	9.36	9.19	9.11	8.95		8.54	8.20	8.06	7.61	7.31	7.16	8.14		9.22	8.55	7.65
H1 lead leg		strides																	
Dutch, Johnny (USA) (1989)		time	5.95	9.65	13.50	17.39	21.43		25.66	29.93	34.35	38.91	43.67		49.38	6 / 3			
reaction time	0.165	interval		3.70	3.85	3.89	4.04		4.23	4.27	4.42	4.56	4.76	5.71			11.44	12.54	13.74
		velocity	7.56	9.46	9.09	9.00	8.66		8.27	8.20	7.92	7.68	7.35	7.01	8.10		9.18	8.37	7.64
H1 lead leg		strides																	

2009 Japanese National High School Championships (Nara, JPN)

FINAL

date 31-Jul-09

Matsuo (2009) - 62nd high school championships: JAF scientific committee - biomechanics data collection

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Abe, Takatoshi (JPN) (1991)		time	6.11	10.05	14.17	18.39	22.76		27.15	31.62	36.22	40.96	45.76		51.04	/ 1			
reaction time		interval		3.94	4.12	4.22	4.37		4.39	4.47	4.60	4.74	4.80	5.28			12.28	13.23	14.14
		velocity	7.36	8.88	8.50	8.29	8.01		7.97	7.83	7.61	7.38	7.29	7.58	7.84		8.55	7.94	7.43
H1 lead leg		strides		13	13	13	14		14	15	15	15	15		127				
Oyama, Takumi (JPN) (1991)		time	6.39	10.51	14.83	19.23	23.64		28.24	32.88	37.52	42.26	47.01		52.26	/ 2			
reaction time		interval		4.12	4.32	4.40	4.41		4.60	4.64	4.64	4.74	4.75	5.25			12.84	13.65	14.13
		velocity	7.04	8.50	8.10	7.95	7.94		7.61	7.54	7.54	7.38	7.37	7.62	7.65		8.18	7.69	7.43
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				
Kato, Seiya (JPN) (1992)		time	6.32	10.46	14.73	19.05	23.45		28.05	32.74	37.47	42.24	47.00		52.42	/ 3			
reaction time		interval		4.14	4.27	4.32	4.40		4.60	4.69	4.73	4.77	4.76	5.42			12.73	13.69	14.26
		velocity	7.12	8.45	8.20	8.10	7.95		7.61	7.46	7.40	7.34	7.35	7.38	7.63		8.25	7.67	7.36
H1 lead leg		strides		14	14	14	14		15	15	15	15	15		131				

2009 Japanese National Championships (Hiroshima, JPN)

FINAL

date 27-Jun-09

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)		time	6.02	9.76	13.53	17.38	21.33		25.56	29.90	34.37	39.02	43.86		49.53	6 / 1			
reaction time		interval		3.74	3.77	3.85	3.95		4.23	4.34	4.47	4.65	4.84	5.67			11.36	12.52	13.96
		velocity	7.48	9.36	9.28	9.09	8.86		8.27	8.06	7.83	7.53	7.23	7.05	8.08		9.24	8.39	7.52
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Yoshikata, Masahira (JPN) (1		time	6.06	9.86	13.75	17.75	21.84		26.04	30.44	34.93	39.55	44.29		49.61	5 / 2			
reaction time		interval		3.80	3.89	4.00	4.09		4.20	4.40	4.49	4.62	4.74	5.32			11.69	12.69	13.85
		velocity	7.43	9.21	9.00	8.75	8.56		8.33	7.95	7.80	7.58	7.38	7.52	8.06		8.98	8.27	7.58
H1 lead leg		strides		13	13	13	13		13	15	15	15	15		125				
Kawakita, Naohiro (JPN) (19		time	6.13	9.97	13.86	17.85	21.95		26.30	30.75	35.30	39.94	44.59		49.74	4 / 3			
reaction time		interval		3.84	3.89	3.99	4.10		4.35	4.45	4.55	4.64	4.65	5.15			11.72	12.90	13.84
		velocity	7.34	9.11	9.00	8.77	8.54		8.05	7.87	7.69	7.54	7.53	7.77	8.04		8.96	8.14	7.59

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	strides		13	13	13	13		14	14	14	15	15		124				

2009 Osaka Grand Prix (Osaka, JPN)

FINAL date 09-May-09

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)		time	6.04	9.73	13.50	17.30	21.19		25.28	29.63	34.02	38.61	43.36		48.77	/ 3			
reaction time		interval		3.69	3.77	3.80	3.89		4.09	4.35	4.39	4.59	4.75	5.41			11.26	12.33	13.73
		velocity	7.45	9.49	9.28	9.21	9.00		8.56	8.05	7.97	7.63	7.37	7.39	8.20		9.33	8.52	7.65
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				
Yoshikata, Masahira (JPN) (1		time	6.06	9.85	13.75	17.66	21.76		25.91	30.25	34.62	39.16	43.83		49.34	/ 4			
reaction time		interval		3.79	3.90	3.91	4.10		4.15	4.34	4.37	4.54	4.67	5.51			11.60	12.59	13.58
		velocity	7.43	9.23	8.97	8.95	8.54		8.43	8.06	8.01	7.71	7.49	7.26	8.11		9.05	8.34	7.73
H1 lead leg		strides		14	14	14	14		14	15	15	15	15		130				
Koike, Takayuki (JPN) (1984)		time	6.02	9.79	13.63	17.57	21.59		25.78	30.15	34.77	39.44	44.28		49.93	/ 7			
reaction time		interval		3.77	3.84	3.94	4.02		4.19	4.37	4.62	4.67	4.84	5.65			11.55	12.58	14.13
		velocity	7.48	9.28	9.11	8.88	8.71		8.35	8.01	7.58	7.49	7.23	7.08	8.01		9.09	8.35	7.43
H1 lead leg		strides		14	14	14	14		14	14	15	15	15		129				

2009 Shizuoka International Athletics Meeting (Fukuroi, JPN)

Race A date 03-May-09

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)		time	6.06	9.76	13.61	17.48	21.47		25.54	29.81	34.13	38.68	43.43		48.99	/ 1			
reaction time		interval		3.70	3.85	3.87	3.99		4.07	4.27	4.32	4.55	4.75	5.56			11.42	12.33	13.62
		velocity	7.43	9.46	9.09	9.04	8.77		8.60	8.20	8.10	7.69	7.37	7.19	8.16		9.19	8.52	7.71
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				

Race C date 03-May-09

Yasuhori (2012) - race pattern analysis of top Japanese 400m hurdlers at major domestic competitions 2009-11

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Yoshikata, Masahira (JPN) (1		time	6.09	9.86	13.80	17.75	21.85		25.99	30.41	34.90	39.55	44.39		49.95	/ 1			
reaction time		interval		3.77	3.94	3.95	4.10		4.14	4.42	4.49	4.65	4.84	5.56			11.66	12.66	13.98
		velocity	7.39	9.28	8.88	8.86	8.54		8.45	7.92	7.80	7.53	7.23	7.19	8.01		9.01	8.29	7.51
H1 lead leg		strides		14	14	14	14		14	15	15	15	15		130				

2008 IAAF World Athletic Final (Stuttgart, GER)

FINAL date 13-Sep-08

Graubner (2009) - http://www.fgs.uni-halle.de

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	6.09	9.88	13.72	17.62	21.68		25.82	30.14	34.56	39.06	43.86		48.96	4 / 1			
reaction time	0.175	interval		3.79	3.84	3.90	4.06		4.14	4.32	4.42	4.50	4.80	5.10			11.53	12.52	13.72
		velocity	7.39	9.23	9.11	8.97	8.62		8.45	8.10	7.92	7.78	7.29	7.84	8.17		9.11	8.39	7.65
H1 lead leg		strides																	
McFarlane, Danny (JAM) (19		time	6.05	9.78	13.61	17.52	21.54		25.59	29.94	34.33	38.89	43.62		49.00	5 / 2			
reaction time	0.166	interval		3.73	3.83	3.91	4.02		4.05	4.35	4.39	4.56	4.73	5.38			11.47	12.42	13.68
		velocity	7.44	9.38	9.14	8.95	8.71		8.64	8.05	7.97	7.68	7.40	7.43	8.16		9.15	8.45	7.68
H1 lead leg		strides																	
Phillips, Isa (JAM) (1984)		time	6.09	9.79	13.63	17.63	21.80		26.11	30.35	34.80	39.34	44.00		49.22	2 / 3			
reaction time	0.185	interval		3.70	3.84	4.00	4.17		4.31	4.24	4.45	4.54	4.66	5.22			11.54	12.72	13.65
		velocity	7.39	9.46	9.11	8.75	8.39		8.12	8.25	7.87	7.71	7.51	7.66	8.13		9.10	8.25	7.69
H1 lead leg		strides																	
Buckley, Markino (JAM) (198		time	6.29	10.11	13.99	17.87	21.90		26.09	30.49	34.94	39.48	44.11		49.52	1 / 4			
reaction time	0.276	interval		3.82	3.88	3.88	4.03		4.19	4.40	4.45	4.54	4.63	5.41			11.58	12.62	13.62
		velocity	7.15	9.16	9.02	9.02	8.68		8.35	7.95	7.87	7.71	7.56	7.39	8.08		9.07	8.32	7.71
H1 lead leg		strides																	
van Zyl, L.J. (RSA) (1985)		time	6.01	9.86	13.81	17.79	21.80		25.97	30.32	34.81	39.36	44.12		49.95	3 / 5			
reaction time	0.158	interval		3.85	3.95	3.98	4.01		4.17	4.35	4.49	4.55	4.76	5.83			11.78	12.53	13.80
		velocity	7.49	9.09	8.86	8.79	8.73		8.39	8.05	7.80	7.69	7.35	6.86	8.01		8.91	8.38	7.61
H1 lead leg		strides																	
Plawgo, Marek (POL) (1981)	0.161	no information available													51.13	7 / 6			
McCoy, Reuben (USA) (1986	0.212	no information available													51.38	6 / 7			
Bennett, LaRon (USA) (1982	0.172	no information available													52.02	8 / 8			

2008 Olympic Games (Beijing, CHN)

FINAL date 18-Aug-08

Behm (2008)- Pekin 2008: Le quatrache masculin - féminin

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Taylor, Angelo (USA) (1978)		time	5.7	9.4	13.1	16.7	20.6		24.6	28.8	33.1	37.5	42.0		47.25	6 / 1			
reaction time	0.164	interval		3.7	3.7	3.6	3.9		4.0	4.2	4.3	4.4	4.5	5.25	PB		11.00	12.10	13.20
		velocity	7.89	9.46	9.46	9.72	8.97		8.75	8.33	8.14	7.95	7.78	7.62	8.47		9.55	8.68	7.95
H1 lead leg	R	strides	21	13	13	13	13		14	14	14	14	14	17.5	160.5				
Clement, Kerron (USA) (198		time	5.9	9.5	13.1	16.9	20.7		24.7	28.9	33.2	37.7	42.5		47.98	4 / 2			
reaction time	0.265	interval		3.6	3.6	3.8	3.8		4.0	4.2	4.3	4.5	4.8	5.48			11.00	12.00	13.60
		velocity	7.63	9.72	9.72	9.21	9.21		8.75	8.33	8.14	7.78	7.29	7.30	8.34		9.55	8.75	7.72

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

H1 lead leg	L	strides	20	13	13	13	13	13	13	13	13	15	17	156				
Jackson, Bershawn (USA) (1		time	5.6	9.2	13.2	17.3	21.5	25.5	29.5	33.7	38.0	42.6		48.06	7 / 3			
reaction time	0.145	interval		3.6	4.0	4.1	4.2	4.0	4.0	4.2	4.3	4.6	5.46			11.70	12.20	13.10
		velocity	8.04	9.72	8.75	8.54	8.33	8.75	8.75	8.33	8.14	7.61	7.33	8.32		8.97	8.61	8.02
H1 lead leg	R	strides	23	15	15	15	15	15	15	15	15	15	19.5	177.5				
McFarlane, Danny (JAM) (19		time	5.8	9.4	13.2	17.0	20.8	24.9	29.2	33.5	38.0	42.8		48.30	5 / 4			
reaction time	0.213	interval		3.6	3.8	3.8	3.8	4.1	4.3	4.3	4.5	4.8	5.50			11.20	12.20	13.60
		velocity	7.76	9.72	9.21	9.21	9.21	8.54	8.14	8.14	7.78	7.29	7.27	8.28		9.38	8.61	7.72
H1 lead leg	R	strides	21	13	13	13	13	14	14	14	15	15	17	162				
van Zyl, L.J. (RSA) (1985)		time	5.7	9.6	13.3	17.5	21.6	25.7	29.9	34.2	38.6	43.3		48.42	8 / 5			
reaction time	0.253	interval		3.9	3.7	4.2	4.1	4.1	4.2	4.3	4.4	4.7	5.12			11.80	12.40	13.40
		velocity	7.89	8.97	9.46	8.33	8.54	8.54	8.33	8.14	7.95	7.45	7.81	8.26		8.90	8.47	7.84
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	18	170				
Plawgo, Marek (POL) (1981)		time	5.9	9.7	13.4	17.3	21.3	25.4	29.8	34.1	38.6	43.3		48.52	3 / 6			
reaction time	0.226	interval		3.8	3.7	3.9	4.0	4.1	4.4	4.3	4.5	4.7	5.22			11.40	12.50	13.50
		velocity	7.63	9.21	9.46	8.97	8.75	8.54	7.95	8.14	7.78	7.45	7.66	8.24		9.21	8.40	7.78
H1 lead leg	R	strides	20	13	13	13	13	14	14	14	14	14	17	159				
Buckley, Markino (JAM) (198		time	5.9	9.9	13.9	17.8	21.7	25.9	30.2	34.5	39.0	43.5		48.60	9 / 7			
reaction time	0.264	interval		4.0	4.0	3.9	3.9	4.2	4.3	4.3	4.5	4.5	5.10			11.90	12.40	13.30
		velocity	7.63	8.75	8.75	8.97	8.97	8.33	8.14	8.14	7.78	7.78	7.84	8.23		8.82	8.47	7.89
H1 lead leg	R	strides	21	13	13	13	13	14	14	14	14	14	17	160				
Iakovákis, Periklís (GRE) (197		time	5.9	9.7	13.3	17.1	20.9	25.0	29.5	34.0	38.7	43.6		49.96	2 / 8			
reaction time	0.195	interval		3.8	3.6	3.8	3.8	4.1	4.5	4.5	4.7	4.9	6.36			11.20	12.40	14.10
		velocity	7.63	9.21	9.72	9.21	9.21	8.54	7.78	7.78	7.45	7.14	6.29	8.01		9.38	8.47	7.45
H1 lead leg	L	strides	21	13	13	13	14	14	14	15	16	16	18.5	167.5				

2008 Japanese National High School Championships (Kumagaya, JPN)

FINAL date 31-Jul-08

Abe (2008) - 61st high school championships: JAF scientific committee - biomechanics data collection

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Kishimoto, Takayuki (JPN) (	time	6.06	10.08	14.24	18.51	22.91		27.37	31.75	36.21	40.75	45.40		50.64	/ 1			
reaction time	interval		4.02	4.16	4.27	4.40		4.46	4.38	4.46	4.54	4.65	5.24			12.45	13.24	13.65
	velocity	7.43	8.71	8.41	8.20	7.95		7.85	7.99	7.85	7.71	7.53	7.63	7.90		8.43	7.93	7.69
H1 lead leg	strides		15	15	15	15		15	15	15	15	15		135				
Mizuno, Tatsuhiko (JPN) (19	time	6.14	10.08	14.20	18.33	22.61		27.12	31.69	36.27	40.96	45.72		51.41	/ 2			
reaction time	interval		3.94	4.12	4.13	4.28		4.51	4.57	4.58	4.69	4.76	5.69			12.19	13.36	14.03
	velocity	7.33	8.88	8.50	8.47	8.18		7.76	7.66	7.64	7.46	7.35	7.03	7.78		8.61	7.86	7.48
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				
Abe, Takatoshi (JPN) (1991)	time	6.42	10.57	14.76	19.00	23.25		27.56	32.01	36.57	41.37	46.41		52.16	/ 3			
reaction time	interval		4.15	4.19	4.24	4.25		4.31	4.45	4.56	4.80	5.04	5.75			12.58	13.01	14.40
	velocity	7.01	8.43	8.35	8.25	8.24		8.12	7.87	7.68	7.29	6.94	6.96	7.67		8.35	8.07	7.29
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				

2008 USA Olympic Trials (Eugene, OR)

FINAL date 29-Jun-08

USATF Hurdle Development (2008)

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Jackson, Bershawn (USA) (1	time	5.79	9.54	13.61	17.87	22.19		26.18	30.25	34.45	38.71	43.13		48.17	4 / 1			
reaction time	interval		3.75	4.07	4.26	4.32		3.99	4.07	4.20	4.26	4.42	5.04			12.08	12.38	12.88
	velocity	7.77	9.33	8.60	8.22	8.10		8.77	8.60	8.33	8.22	7.92	7.94	8.30		8.69	8.48	8.15
H1 lead leg	L strides	23	15	15	15	15		15	15	15	15	15		158				
Clement, Kerron (USA) (198	time	6.04	9.78	13.55	17.50	21.60		25.74	30.03	34.45	38.87	43.43		48.36	5 / 2			
reaction time	interval		3.74	3.77	3.95	4.10		4.14	4.29	4.42	4.42	4.56	4.93			11.46	12.53	13.40
	velocity	7.45	9.36	9.28	8.86	8.54		8.45	8.16	7.92	7.92	7.68	8.11	8.27		9.16	8.38	7.84
H1 lead leg	R strides	20	13	13	13	13		13	13	13	13	15		139				
Taylor, Angelo (USA) (1978)	time	6.07	9.71	13.43	17.40	21.67		25.96	30.28	34.64	39.02	43.47		48.42	3 / 3			
reaction time	interval		3.64	3.72	3.97	4.27		4.29	4.32	4.36	4.38	4.45	4.95			11.33	12.88	13.19
	velocity	7.41	9.62	9.41	8.82	8.20		8.16	8.10	8.03	7.99	7.87	8.08	8.26		9.27	8.15	7.96
H1 lead leg	L strides	21	13	13	13	14		14	14	14	14	14		144				
Gaymon, Justin (USA) (1986	time	6.07	9.97	13.73	17.73	21.70		25.82	30.09	34.50	38.87	43.32		48.46	8 / 4			
reaction time	interval		3.90	3.76	4.00	3.97		4.12	4.27	4.41	4.37	4.45	5.14	PB		11.66	12.36	13.23
	velocity	7.41	8.97	9.31	8.75	8.82		8.50	8.20	7.94	8.01	7.87	7.78	8.25		9.01	8.50	7.94
H1 lead leg	R strides	22	14	14	14	14		15	15	15	15	15		153				
Dutch, Johnny (USA) (1989)	time	6.03	9.82	13.66	17.71	21.85		26.10	30.34	34.66	38.97	43.37		48.52	7 / 5			
reaction time	interval		3.79	3.84	4.05	4.14		4.25	4.24	4.32	4.31	4.40	5.15	PB		11.68	12.63	13.03
	velocity	7.46	9.23	9.11	8.64	8.45		8.24	8.25	8.10	8.12	7.95	7.77	8.24		8.99	8.31	8.06
H1 lead leg	R strides	22	13	13	13	13		14	14	15	15	15		147				
Johnson, Brandon (USA) (1	time	5.84	9.59	13.41	17.37	21.54		25.64	29.96	34.38	38.89	43.38		48.72	2 / 6			

reaction time		interval		3.75	3.82	3.96	4.17	4.10	4.32	4.42	4.51	4.49	5.34			11.53	12.59	13.42
		velocity	7.71	9.33	9.16	8.84	8.39	8.54	8.10	7.92	7.76	7.80	7.49	8.21		9.11	8.34	7.82
H1 lead leg	L	strides	21	13	13	13	13	13	14	14	14	14		142				
McCoy, Reuben (USA) (1986		time	6.07	9.88	13.68	17.67	21.81	26.01	30.31	34.70	39.12	43.71		49.18	6 / 7			
reaction time		interval		3.81	3.80	3.99	4.14	4.20	4.30	4.39	4.42	4.59	5.47			11.60	12.64	13.40
		velocity	7.41	9.19	9.21	8.77	8.45	8.33	8.14	7.97	7.92	7.63	7.31	8.13		9.05	8.31	7.84
H1 lead leg	R	strides	21	13	13	13	13	14	14	15	15	15		146				
Bennett, LaRon (USA) (1982		time	6.16	10.11	13.99	18.10	22.29	26.21	31.18	35.77	40.39	45.18		50.89	1 / 8			
reaction time		interval		3.95	3.88	4.11	4.19	3.92	4.97	4.59	4.62	4.79	5.71			11.94	13.08	14.00
		velocity	7.31	8.86	9.02	8.52	8.35	8.93	7.04	7.63	7.58	7.31	7.01	7.86		8.79	8.03	7.50
H1 lead leg	R	strides	22	14	14	14	14	15	15	15	15	15		153				

2008 Japanese National Championships (Kawasaki, JPN)

FINAL

date 27-Jun-08

Yasunori (2009) - race pattern analysis of prestigious Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)	time	5.82	9.49	13.38	17.32	21.31		25.45	29.69	34.13	38.78	43.65		49.17	/ 1			
reaction time	interval		3.67	3.89	3.94	3.99		4.14	4.24	4.44	4.65	4.87	5.52			11.50	12.37	13.96
	velocity	7.73	9.54	9.00	8.88	8.77		8.45	8.25	7.88	7.53	7.19	7.25	8.14		9.13	8.49	7.52
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Narisako, Kenji (JPN) (1984)	time	6.02	9.77	13.61	17.46	21.43		25.50	29.84	34.28	38.88	43.72		49.47	/ 2			
reaction time	interval		3.75	3.84	3.85	3.97		4.07	4.34	4.44	4.60	4.84	5.75			11.44	12.38	13.88
	velocity	7.48	9.33	9.11	9.09	8.82		8.60	8.06	7.88	7.61	7.23	6.96	8.09		9.18	8.48	7.56
H1 lead leg	strides		13	13	13	13		13	14	14	15	15		123				
Koike, Takayuki (JPN) (1984)	time	5.92	9.62	13.44	17.31	21.36		25.56	29.93	34.40	39.07	44.11		50.09	/ 3			
reaction time	interval		3.70	3.82	3.87	4.05		4.20	4.37	4.47	4.67	5.04	5.98			11.39	12.62	14.18
	velocity	7.60	9.46	9.16	9.04	8.64		8.33	8.01	7.83	7.49	6.94	6.69	7.99		9.22	8.32	7.40
H1 lead leg	strides		13	13	13	13		13	14	14	15	15		123				

2008 Osaka Grand Prix (Osaka, JPN)

FINAL

date 10-May-08

Yasunori (2009) - race pattern analysis of prestigious Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)	time	5.97	9.59	13.36	17.16	21.11		25.21	29.56	33.98	38.58	43.37		49.00	9 / 1			
reaction time	interval		3.62	3.77	3.80	3.95		4.10	4.35	4.42	4.60	4.79	5.63			11.19	12.40	13.81
	velocity	7.54	9.67	9.28	9.21	8.86		8.54	8.05	7.92	7.61	7.31	7.10	8.16		9.38	8.47	7.60
H1 lead leg	strides		13	13	13	13		13	14	14	15	15		123				

2008 Shizuoka International Athletics Meeting (Fukuroi, JPN)

Race 2

date 03-May-08

Yasunori (2009) - race pattern analysis of prestigious Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)	time	6.04	9.74	13.56	17.40	21.35		25.62	29.92	34.46	39.10	43.82		49.44	/ 1			
reaction time	interval		3.70	3.82	3.84	3.95		4.27	4.30	4.54	4.64	4.72	5.62			11.36	12.52	13.90
	velocity	7.45	9.46	9.16	9.11	8.86		8.20	8.14	7.71	7.54	7.42	7.12	8.09		9.24	8.39	7.55
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				

2007 IAAF World Athletic Final (Stuttgart, GER)

FINAL

date 22-Sep-07

Graubner (2007) - http://www.fgs.uni-halle.de

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Plawgo, Marek (POL) (1981)		time	5.88	9.62	13.44	17.26	21.36		25.56	30.00	34.43	38.88	43.36		48.35	4 / 1			
reaction time	0.130	interval		3.74	3.82	3.82	4.10		4.20	4.44	4.43	4.45	4.48	4.99			11.38	12.74	13.36
		velocity	7.65	9.36	9.16	9.16	8.54		8.33	7.88	7.90	7.87	7.81	8.02	8.27		9.23	8.24	7.86
H1 lead leg		strides																	
Clement, Kerron (USA) (198		time	6.26	9.80	13.54	17.36	21.32		25.44	29.85	34.43	38.96	43.57		48.35	6 / 2			
reaction time	0.178	interval		3.54	3.74	3.82	3.96		4.12	4.41	4.58	4.53	4.61	4.78			11.10	12.49	13.72
		velocity	7.19	9.89	9.36	9.16	8.84		8.50	7.94	7.64	7.73	7.59	8.37	8.27		9.46	8.41	7.65
H1 lead leg		strides																	
Carter, James (USA) (1978)		time	6.00	9.52	13.35	17.14	21.18		25.30	29.54	33.92	38.52	43.16		48.36	5 / 3			
reaction time	0.132	interval		3.52	3.83	3.79	4.04		4.12	4.24	4.38	4.60	4.64	5.20			11.14	12.40	13.62
		velocity	7.50	9.94	9.14	9.23	8.66		8.50	8.25	7.99	7.61	7.54	7.69	8.27		9.43	8.47	7.71
H1 lead leg		strides																	
Jackson, Bershawn (USA) (1		time	5.86	9.68	13.68	17.80	21.96		26.02	30.14	34.38	38.72	43.33		48.58	2 / 4			
reaction time	0.167	interval		3.82	4.00	4.12	4.16		4.06	4.12	4.24	4.34	4.61	5.25			11.94	12.34	13.19
		velocity	7.68	9.16	8.75	8.50	8.41		8.62	8.50	8.25	8.06	7.59	7.62	8.23		8.79	8.51	7.96
H1 lead leg		strides																	
Taylor, Angelo (USA) (1978)		time	6.34	9.94	13.72	17.54	21.52		25.80	30.44	35.09	39.64	44.18		49.27	8 / 5			
reaction time	0.152	interval		3.60	3.78	3.82	3.98		4.28	4.64	4.65	4.55	4.54	5.09			11.20	12.90	13.74
		velocity	7.10	9.72	9.26	9.16	8.79		8.18	7.54	7.53	7.69	7.71	7.86	8.12		9.38	8.14	7.64
H1 lead leg		strides																	
Ferguson, Kenneth (USA) (1		time	6.14	9.62	13.42	17.39	21.58		25.93	30.36	34.86	39.39	44.04		49.45	7 / 6			
reaction time	0.153	interval		3.48	3.80	3.97	4.19		4.35	4.43	4.50	4.53	4.65	5.41			11.25	12.97	13.68

		velocity	7.33	10.06	9.21	8.82	8.35	8.05	7.90	7.78	7.73	7.53	7.39	8.09		9.33	8.10	7.68
H1 lead leg		strides																
Sańchez, Félix (DOM) (1977)		time	6.02	9.70	13.46	17.34	21.44	25.76	30.24	34.78	39.38	44.20		49.61	3 / 7			
reaction time	0.151	interval		3.68	3.76	3.88	4.10	4.32	4.48	4.54	4.60	4.82	5.41			11.32	12.90	13.96
		velocity	7.48	9.51	9.31	9.02	8.54	8.10	7.81	7.71	7.61	7.26	7.39	8.06		9.28	8.14	7.52
H1 lead leg		strides																
van Zyl, L.J. (RSA) (1985)		time	5.95	9.72	13.58	17.54	21.66	26.02	30.37	34.85	39.46	44.25		49.62	1 / 8			
reaction time	0.189	interval		3.77	3.86	3.96	4.12	4.36	4.35	4.48	4.61	4.79	5.37			11.59	12.83	13.88
		velocity	7.56	9.28	9.07	8.84	8.50	8.03	8.05	7.81	7.59	7.31	7.45	8.06		9.06	8.18	7.56
H1 lead leg		strides																

Behm (2007) - Osaka 2007: Le quatrache

2007 IAAF World Championships (Osaka, JPN)

Yasunori (2008) - race pattern analysis of the world and Japanese top 400m hurdlers

Ae (2008) - IAAF biomechanics team - a booklet of biomechanics data

FINAL

date 28-Aug-07

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10	
Clement, Kerron (USA) (198		time	5.92	9.60	13.30	16.98	20.80		24.82	28.98	33.28	37.86	42.52		47.61	4 / 1				*Ae (2008)*
reaction time	0.169	interval		3.68	3.70	3.68	3.82		4.02	4.16	4.30	4.58	4.66	5.09			11.06	12.00	13.54	
		velocity	7.60	9.51	9.46	9.51	9.16		8.71	8.41	8.14	7.64	7.51	7.86	8.40		9.49	8.75	7.75	
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	15	15	16.5	157.5					
Sańchez, Félix (DOM) (1977)		time	5.95	9.65	13.38	17.18	21.10		25.25	29.52	33.83	38.23	42.72		48.01	5 / 2				*Ae (2008)*
reaction time	0.164	interval		3.70	3.73	3.80	3.92		4.15	4.27	4.31	4.40	4.49	5.29			11.23	12.34	13.20	
		velocity	7.56	9.46	9.38	9.21	8.93		8.43	8.20	8.12	7.95	7.80	7.56	8.33		9.35	8.51	7.95	
H1 lead leg	L	strides	21	13	13	13	13		14	15	15	15	15	18.5	165.5					
Plawgo, Marek (POL) (1981)		time	5.87	9.52	13.28	17.06	20.97		25.15	29.48	33.76	38.22	42.80		48.12	7 / 3				*Ae (2008)*
reaction time	0.157	interval		3.65	3.76	3.78	3.91		4.18	4.33	4.28	4.46	4.58	5.32	**NR**		11.19	12.42	13.32	
		velocity	7.67	9.59	9.31	9.26	8.95		8.37	8.08	8.18	7.85	7.64	7.52	8.31		9.38	8.45	7.88	
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17	159					
Carter, James (USA) (1978)		time	5.76	9.45	13.19	17.04	21.04		25.18	29.40	33.65	38.14	42.84		48.40	6 / 4				*Yasunori (2008)*
reaction time	0.152	interval		3.69	3.74	3.85	4.00		4.14	4.22	4.25	4.49	4.70	5.56			11.28	12.36	13.44	
		velocity	7.81	9.49	9.36	9.09	8.75		8.45	8.29	8.24	7.80	7.45	7.19	8.26		9.31	8.50	7.81	
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.7	159.7					
McFarlane, Danny (JAM) (19		time	6.02	9.76	13.56	17.43	21.43		25.50	29.76	34.06	38.51	43.18		48.59	9 / 5				*Yasunori (2008)*
reaction time	0.172	interval		3.74	3.80	3.87	4.00		4.07	4.26	4.30	4.45	4.67	5.41			11.41	12.33	13.42	
		velocity	7.48	9.36	9.21	9.04	8.75		8.60	8.22	8.14	7.87	7.49	7.39	8.23		9.20	8.52	7.82	
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	18	160					
Iakovákis, Periklís (GRE) (197		time	5.98	9.67	13.42	17.27	21.26		25.40	29.82	34.27	38.94	43.69		49.25	2 / 6				*Yasunori (2008)*
reaction time	0.154	interval		3.69	3.75	3.85	3.99		4.14	4.42	4.45	4.67	4.75	5.56			11.29	12.55	13.87	
		velocity	7.53	9.49	9.33	9.09	8.77		8.45	7.92	7.87	7.49	7.37	7.19	8.12		9.30	8.37	7.57	
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	14		142					
Williams, Derrick (USA) (198		time	5.7	9.4	13.2	17.3	21.4		25.8	30.3	34.9	39.6			52.97	8 / 7				*Behm (2007)*
reaction time	0.159	interval		3.7	3.8	4.1	4.1		4.4	4.5	4.6	4.7					11.60	13.00		
		velocity	7.89	9.46	9.21	8.54	8.54		7.95	7.78	7.61	7.45			7.55		9.05	8.08		
H1 lead leg	R	strides	20	13	14	14	14		14	15	15	15			134					
Kunkel, Adam (CAN) (1981)		time	5.8	9.5	13.3	17.3	21.9								dnf	3 / --				*Behm (2007)*
reaction time	0.181	interval		3.7	3.8	4.0	4.6										11.50			
		velocity	7.76	9.46	9.21	8.75	7.61										9.13			
H1 lead leg	L	strides	21	13	14	14	14								76					

Semi-Final 1

date 26-Aug-07

Yasunori (2008) - race pattern analysis of the world and Japanese top 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)		time	6.02	9.71	13.45	17.24	21.18		25.27	29.58	33.90	38.42	43.04		48.44	7 / 5			
reaction time	0.179	interval		3.69	3.74	3.79	3.94		4.09	4.31	4.32	4.52	4.62	5.40			11.22	12.34	13.46
		velocity	7.48	9.49	9.36	9.23	8.88		8.56	8.12	8.10	7.74	7.58	7.41	8.26		9.36	8.51	7.80
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	19.2	163.2				

Heat 5

date 25-Aug-07

Yasunori (2008) - race pattern analysis of the world and Japanese top 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)		time	6.00	9.70	13.44	17.28	21.22		25.32	29.72	34.12	38.72	43.39		48.92	2 / 3			
reaction time	0.172	interval		3.70	3.74	3.84	3.94		4.10	4.40	4.40	4.60	4.67	5.53			11.28	12.44	13.67
		velocity	7.50	9.46	9.36	9.11	8.88		8.54	7.95	7.95	7.61	7.49	7.23	8.18		9.31	8.44	7.68
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	19.2	163.2				

Heat 3

date 25-Aug-07

Yasunori (2008) - race pattern analysis of the world and Japanese top 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)		time	5.87	9.59	13.44	17.43	21.48		25.68	29.98	34.53	39.23	44.08		49.67	7 / 6			
reaction time	0.197	interval		3.72	3.85	3.99	4.05		4.20	4.30	4.55	4.70	4.85	5.59			11.56	12.55	14.10
		velocity	7.67	9.41	9.09	8.77	8.64		8.33	8.14	7.69	7.45	7.22	7.16	8.05		9.08	8.37	7.45
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				

Heat 2

date 25-Aug-07

Yasunori (2008) - race pattern analysis of the world and Japanese top 400m hurdlers

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Yoshikata, Masahira (JPN) (1		time	6.02	9.76	13.61	17.55	21.67		25.92	30.41	34.96	39.70	44.67		50.59	6 / 6			
reaction time	0.187	interval		3.74	3.85	3.94	4.12		4.25	4.49	4.55	4.74	4.97	5.92			11.53	12.86	14.26
		velocity	7.48	9.36	9.09	8.88	8.50		8.24	7.80	7.69	7.38	7.04	6.76	7.91		9.11	8.16	7.36
H1 lead leg	L	strides	21	14	14	14	14		14	15	15	15	15	19.7	170.7				

2007 Japanese National Championships (Osaka, JPN)

FINAL

date 30-Jun-07

Yasunori (2008) - race pattern analysis of the world and Japanese top 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)		time	5.86	9.53	13.32	17.22	21.16		25.26	29.51	34.00	38.62	43.36		48.87	/ 1			
reaction time		interval		3.67	3.79	3.90	3.94		4.10	4.25	4.49	4.62	4.74	5.51			11.36	12.29	13.85
		velocity	7.68	9.54	9.23	8.97	8.88		8.54	8.24	7.80	7.58	7.38	7.26	8.18		9.24	8.54	7.58
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				
Narisako, Kenji (JPN) (1984)		time	5.99	9.68	13.42	17.24	21.16		25.23	29.55	34.00	38.59	43.31		49.01	/ 2			
reaction time		interval		3.69	3.74	3.82	3.92		4.07	4.32	4.45	4.59	4.72	5.70			11.25	12.31	13.76
		velocity	7.51	9.49	9.36	9.16	8.93		8.60	8.10	7.87	7.63	7.42	7.02	8.16		9.33	8.53	7.63
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				
Yoshikata, Masahira (JPN) (1		time	6.02	9.79	13.73	17.75	21.85		26.07	30.44	34.84	39.38	44.05		49.53	/ 3			
reaction time		interval		3.77	3.94	4.02	4.10		4.22	4.37	4.40	4.54	4.67	5.48			11.73	12.69	13.61
		velocity	7.48	9.28	8.88	8.71	8.54		8.29	8.01	7.95	7.71	7.49	7.30	8.08		8.95	8.27	7.71
H1 lead leg		strides		14	14	14	14		14	15	15	15	15		130				

2007 European Cup (Munich, GER)

FINAL

date 23-Jun-07

Graubner (2007) - http://www.fgs.uni-halle.de

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Iakovákis, Periklís (GRE) (197		time	6.13	9.95	13.73	17.54	21.42		25.48	29.70	34.02	38.44	43.03		48.35	/ 1			
reaction time	0.165	interval		3.82	3.78	3.81	3.88		4.06	4.22	4.32	4.42	4.59	5.32			11.41	12.16	13.33
		velocity	7.34	9.16	9.26	9.19	9.02		8.62	8.29	8.10	7.92	7.63	7.52	8.27		9.20	8.63	7.88
H1 lead leg		strides																	
Plawgo, Marek (POL) (1981)		time	6.04	9.94	13.82	17.78	21.83		25.84	30.34	34.70	39.20	43.84		48.90	/ 2			
reaction time	0.151	interval		3.90	3.88	3.96	4.05		4.01	4.50	4.36	4.50	4.64	5.06			11.74	12.56	13.50
		velocity	7.45	8.97	9.02	8.84	8.64		8.73	7.78	8.03	7.78	7.54	7.91	8.18		8.94	8.36	7.78
H1 lead leg		strides																	
Keïta, Naman (FRA) (1978)		time	6.25	9.94	13.81	17.68	21.63		25.72	29.98	34.32	38.73	43.50		48.90	/ 3			
reaction time	0.248	interval		3.69	3.87	3.87	3.95		4.09	4.26	4.34	4.41	4.77	5.40			11.43	12.30	13.52
		velocity	7.20	9.49	9.04	9.04	8.86		8.56	8.22	8.06	7.94	7.34	7.41	8.18		9.19	8.54	7.77
H1 lead leg		strides																	
Derevyagin, Aleksandr (RUS		time	6.17	10.12	14.14	18.12	22.21		26.30	30.52	34.80	39.20	43.74		49.12	/ 4			
reaction time	0.162	interval		3.95	4.02	3.98	4.09		4.09	4.22	4.28	4.40	4.54	5.38	PB		11.95	12.40	13.22
		velocity	7.29	8.86	8.71	8.79	8.56		8.56	8.29	8.18	7.95	7.71	7.43	8.14		8.79	8.47	7.94
H1 lead leg		strides																	
Goller, Thomas (GER) (1977)		time	6.00	9.77	13.68	17.64	21.70		25.97	30.46	35.10	39.94	44.80		50.48	/ 5			
reaction time	0.143	interval		3.77	3.91	3.96	4.06		4.27	4.49	4.64	4.84	4.86	5.68			11.64	12.82	14.34
		velocity	7.50	9.28	8.95	8.84	8.62		8.20	7.80	7.54	7.23	7.20	7.04	7.92		9.02	8.19	7.32
H1 lead leg		strides																	
Carne, Ben (GBR) (1986)		time	6.15	10.13	14.06	18.10	22.30		26.56	30.93	35.50	40.17	45.06		50.74	/ 6			
reaction time	0.212	interval		3.98	3.93	4.04	4.20		4.26	4.37	4.57	4.67	4.89	5.68			11.95	12.83	14.13
		velocity	7.32	8.79	8.91	8.66	8.33		8.22	8.01	7.66	7.49	7.16	7.04	7.88		8.79	8.18	7.43
H1 lead leg		strides																	
Bultheel, Michaël (BEL) (198		time	6.16	10.03	13.99	17.99	22.10		26.42	30.92	35.61	40.40	45.30		50.87	/ 7			
reaction time	0.149	interval		3.87	3.96	4.00	4.11		4.32	4.50	4.69	4.79	4.90	5.57			11.83	12.93	14.38
		velocity	7.31	9.04	8.84	8.75	8.52		8.10	7.78	7.46	7.31	7.14	7.18	7.86		8.88	8.12	7.30
H1 lead leg		strides																	

2007 USATF National Championship (Indianapolis, IN)

Heat 4

date 21-Jun-07

USATF Men's Hurdle Development (2007)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Ferguson, Kenneth (USA) (1		time	6.11	9.79	13.60	17.57	21.72		26.21	30.85	35.45	39.84	44.29		49.31	5 / 1			
reaction time		interval		3.68	3.81	3.97	4.15		4.49	4.64	4.60	4.39	4.45	5.02			11.46	13.28	13.44
		velocity	7.36	9.51	9.19	8.82	8.43		7.80	7.54	7.61	7.97	7.87	7.97	8.11		9.16	7.91	7.81
H1 lead leg	L	strides	22	13	13	13	13		15	15	15	15	15		149				
Tinsley, Michael (USA) (1984		time	6.11	9.89	13.78	17.78	22.02		26.46	30.90	35.29	39.72	44.24		49.32	6 / 2			
reaction time		interval		3.78	3.89	4.00	4.24		4.44	4.44	4.39	4.43	4.52	5.08			11.67	13.12	13.34
		velocity	7.36	9.26	9.00	8.75	8.25		7.88	7.88	7.97	7.90	7.74	7.87	8.11		9.00	8.00	7.87
H1 lead leg	L	strides	21	13	13	13	14		14	14	14	14	15		145				
Bennett, LaRon (USA) (1982		time	6.25	10.23	14.11	18.20	22.31		26.59	30.89	35.25	39.76	44.23		49.46	7 / 3			
reaction time		interval		3.98	3.88	4.09	4.11		4.28	4.30	4.36	4.51	4.47	5.23			11.95	12.69	13.34
		velocity	7.20	8.79	9.02	8.56	8.52		8.18	8.14	8.03	7.76	7.83	7.65	8.09		8.79	8.27	7.87
H1 lead leg	R	strides	22	14	14	14	14		15	16	15	15	15		154				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Hutcherson, Orentheus (US		time	5.91	9.74	13.69	17.76	21.97	26.35	30.81	35.24	39.82	44.50		49.93	8 / 4			
reaction time		interval		3.83	3.95	4.07	4.21	4.38	4.46	4.43	4.58	4.68	5.43			11.85	13.05	13.69
		velocity	7.61	9.14	8.86	8.60	8.31	7.99	7.85	7.90	7.64	7.48	7.37	8.01		8.86	8.05	7.67
H1 lead leg	R	strides	22	14	14	14	14	15	15	15	15	15		153				

Heat 3

date 21-Jun-07 — *USATF Men's Hurdle Development (2007)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Johnson, Brandon (USA) (1		time	5.87	9.58	13.51	17.48	21.60		25.86	30.46	35.07	39.01	44.69		50.04	5 / 1			
reaction time		interval		3.71	3.93	3.97	4.12		4.26	4.60	4.61	3.94	5.68	5.35			11.61	12.98	14.23
		velocity	7.67	9.43	8.91	8.82	8.50		8.22	7.61	7.59	8.88	6.16	7.48	7.99		9.04	8.09	7.38
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15		144				
Gaymon, Justin (USA) (1986		time	6.02	10.01	14.06	18.27	22.41		26.75	31.18	35.70	40.27	44.93		50.16	6 / 2			
reaction time		interval		3.99	4.05	4.21	4.14		4.34	4.43	4.52	4.57	4.66	5.23			12.25	12.91	13.75
		velocity	7.48	8.77	8.64	8.31	8.45		8.06	7.90	7.74	7.66	7.51	7.65	7.97		8.57	8.13	7.64
H1 lead leg	R	strides	22	15	15	14	14		15	15	15	15	15		155				
McCoy, Reuben (USA) (1986		time	6.21	9.99	13.93	18.03	22.37		26.86	31.33	35.79	40.32	44.89		50.16	8 / 3			
reaction time		interval		3.78	3.94	4.10	4.34		4.49	4.47	4.46	4.53	4.57	5.27			11.82	13.30	13.56
		velocity	7.25	9.26	8.88	8.54	8.06		7.80	7.83	7.85	7.73	7.66	7.59	7.97		8.88	7.89	7.74
H1 lead leg	R	strides	21	13	13	13	15		15	15	15	15	15		150				
Peresta, Andrew (USA) (198		time	5.97	9.91	13.93	18.00	22.21		26.53	30.96	35.39	40.12	44.94		50.22	2 / 4			
reaction time		interval		3.94	4.02	4.07	4.21		4.32	4.43	4.43	4.73	4.82	5.28			12.03	12.96	13.98
		velocity	7.54	8.88	8.71	8.60	8.31		8.10	7.90	7.90	7.40	7.26	7.58	7.96		8.73	8.10	7.51
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	16	15		158				
Small, Javonie (USA) (1982)		time	5.96	9.83	13.84	17.91	22.07		26.66	31.28	35.85	40.47	45.30		50.96	7 / 5			
reaction time		interval		3.87	4.01	4.07	4.16		4.59	4.62	4.57	4.62	4.83	5.66			11.95	13.37	14.02
		velocity	7.55	9.04	8.73	8.60	8.41		7.63	7.58	7.66	7.58	7.25	7.07	7.85		8.79	7.85	7.49
H1 lead leg	R	strides	22	15	14	14	14		15	14	15	15	15		153				
Sharpe, Fred (USA) (1978)		time	6.20	10.09	14.19	18.30	22.54		26.91	31.48	36.08	40.79	45.51		51.00	3 / 6			
reaction time		interval		3.89	4.10	4.11	4.24		4.37	4.57	4.60	4.71	4.72	5.49			12.10	13.18	14.03
		velocity	7.26	9.00	8.54	8.52	8.25		8.01	7.66	7.61	7.43	7.42	7.29	7.84		8.68	7.97	7.48
H1 lead leg	R	strides	23	15	15	15	15		15	16	16	16	16		162				

Heat 2

date 21-Jun-07 — *USATF Men's Hurdle Development (2007)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Carter, James (USA) (1978)		time	5.97	9.68	13.56	17.58	21.65		25.86	30.24	34.65	39.22	43.91		49.07	8 / 1			
reaction time		interval		3.71	3.88	4.02	4.07		4.21	4.38	4.41	4.57	4.69	5.16			11.61	12.66	13.67
		velocity	7.54	9.43	9.02	8.71	8.60		8.31	7.99	7.94	7.66	7.46	7.75	8.15		9.04	8.29	7.68
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14		142				
Harris, Rickey (USA) (1981)		time	6.02	9.93	13.85	17.85	21.97		26.28	30.63	35.11	39.71	44.41		49.46	6 / 3			
reaction time		interval		3.91	3.92	4.00	4.12		4.31	4.35	4.48	4.60	4.70	5.05			11.83	12.78	13.78
		velocity	7.48	8.95	8.93	8.75	8.50		8.12	8.05	7.81	7.61	7.45	7.92	8.09		8.88	8.22	7.62
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15		157				
Dudley, Eric (USA) (1980)		time	6.11	9.91	13.89	17.92	22.05		26.36	30.74	35.22	39.91	44.43		49.58	7 / 4			
reaction time		interval		3.80	3.98	4.03	4.13		4.31	4.38	4.48	4.69	4.52	5.15	PB		11.81	12.82	13.69
		velocity	7.36	9.21	8.79	8.68	8.47		8.12	7.99	7.81	7.46	7.74	7.77	8.07		8.89	8.19	7.67
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	14		142				
Greene, Joe (USA) (1987)		time	6.17	9.88	13.70	17.60	21.71		26.08	30.61	35.25	39.94	44.72		50.44	5 / 6			
reaction time		interval		3.71	3.82	3.90	4.11		4.37	4.53	4.64	4.69	4.78	5.72			11.43	13.01	14.11
		velocity	7.29	9.43	9.16	8.97	8.52		8.01	7.73	7.54	7.46	7.32	6.99	7.93		9.19	8.07	7.44
H1 lead leg	R	strides	21	13	13	13	13		14	14	15	15	15		146				

Heat 1

date 21-Jun-07 — *USATF Men's Hurdle Development (2007)*

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	5.99	9.78	13.65	17.60	21.79		26.04	30.41	34.87	39.57	44.38		49.72	6 / 1			
reaction time		interval		3.79	3.87	3.95	4.19		4.25	4.37	4.46	4.70	4.81	5.34			11.61	12.81	13.97
		velocity	7.51	9.23	9.04	8.86	8.35		8.24	8.01	7.85	7.45	7.28	7.49	8.05		9.04	8.20	7.52
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	15	15		141				
Woody, Joey (USA) (1973)		time	6.09	9.99	13.68	17.60	21.62		25.86	30.31	34.82	39.54	44.38		49.92	4 / 2			
reaction time		interval		3.90	3.69	3.92	4.02		4.24	4.45	4.51	4.72	4.84	5.54			11.51	12.71	14.07
		velocity	7.39	8.97	9.49	8.93	8.71		8.25	7.87	7.76	7.42	7.23	7.22	8.01		9.12	8.26	7.46
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15		144				
Derby, Brian (USA) (1981)		time	6.09	10.03	13.98	18.03	22.17		26.61	31.09	35.67	40.27	44.91		50.26	5 / 3			
reaction time		interval		3.94	3.95	4.05	4.14		4.44	4.48	4.58	4.60	4.64	5.35			11.94	13.06	13.82
		velocity	7.39	8.88	8.86	8.64	8.45		7.88	7.81	7.64	7.61	7.54	7.48	7.96		8.79	8.04	7.60
H1 lead leg	L	strides	21	14	13	13	13		14	14	14	14	14		144				
Scott, Bryan (USA) (1985)		time	6.17	10.13	14.05	18.27	22.47		26.79	31.10	35.74	40.31	45.05		50.39	7 / 4			
reaction time		interval		3.96	3.92	4.22	4.20		4.32	4.31	4.64	4.57	4.74	5.34			12.10	12.83	13.95
		velocity	7.29	8.84	8.93	8.29	8.33		8.10	8.12	7.54	7.66	7.38	7.49	7.94		8.68	8.18	7.53

H1 lead leg	L	strides	22	14	14	14	14	14	14	15	15	15	151				
Prince, Damian (USA) (1986)		time	6.01	9.79	13.66	17.65	21.89	26.38	30.83	35.48	40.55		dnf	8 / --			
reaction time		interval		3.78	3.87	3.99	4.24	4.49	4.45	4.65	5.07				11.64	13.18	
		velocity	7.49	9.26	9.04	8.77	8.25	7.80	7.87	7.53	6.90				9.02	7.97	
H1 lead leg	L	strides	22	14	14	14	14	15	15	15	16		139				

2007 Osaka Grand Prix (Osaka, JPN)

FINAL date 05-May-07

Yasunori (2008) - race pattern analysis of the world and Japanese top 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Jackson, Bershawn (USA) (1	time	5.71	9.40	13.29	17.36	21.48		25.47	29.57	33.81	38.23	42.88		48.13	/ 1			
reaction time	interval		3.69	3.89	4.07	4.12		3.99	4.10	4.24	4.42	4.65	5.25			11.65	12.21	13.31
	velocity	7.88	9.49	9.00	8.60	8.50		8.77	8.54	8.25	7.92	7.53	7.62	8.31		9.01	8.60	7.89
H1 lead leg	strides		15	15	15	15		15	15	15	15	15		135				
Carter, James (USA) (1978)	time	5.79	9.49	13.24	17.21	21.28		25.40	29.62	33.94	38.36	42.95		48.22	/ 2			
reaction time	interval		3.70	3.75	3.97	4.07		4.12	4.22	4.32	4.42	4.59	5.27			11.42	12.41	13.33
	velocity	7.77	9.46	9.33	8.82	8.60		8.50	8.29	8.10	7.92	7.63	7.59	8.30		9.19	8.46	7.88
H1 lead leg	strides		13	13	13	13		13	14	14	14	14		121				
Tamesue, Dai (JPN) (1978)	time	5.82	9.52	13.31	17.18	21.17		25.26	29.45	33.85	38.44	43.23		48.73	/ 3			
reaction time	interval		3.70	3.79	3.87	3.99		4.09	4.19	4.40	4.59	4.79	5.50			11.36	12.27	13.78
	velocity	7.73	9.46	9.23	9.04	8.77		8.56	8.35	7.95	7.63	7.31	7.27	8.21		9.24	8.56	7.62
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Narisako, Kenji (JPN) (1984)	time	5.97	9.66	13.38	17.20	21.14		25.21	29.46	34.08	38.85	43.55		49.20	/ 4			
reaction time	interval		3.69	3.72	3.82	3.94		4.07	4.25	4.62	4.77	4.70	5.65			11.23	12.26	14.09
	velocity	7.54	9.49	9.41	9.16	8.88		8.60	8.24	7.58	7.34	7.45	7.08	8.13		9.35	8.56	7.45
H1 lead leg	strides		13	13	13	13		13	14	14	15	15		123				
Yoshikata, Masahira (JPN) (1	time	6.07	9.82	13.69	17.61	21.71		25.88	30.27	34.72	39.34	44.13		49.69	/ 5			
reaction time	interval		3.75	3.87	3.92	4.10		4.17	4.39	4.45	4.62	4.79	5.56			11.54	12.66	13.86
	velocity	7.41	9.33	9.04	8.93	8.54		8.39	7.97	7.87	7.58	7.31	7.19	8.05		9.10	8.29	7.58
H1 lead leg	strides		14	14	14	14		14	15	15	15	15		130				

2006 Seiko Super Grand Prix (Yokohama, JPN)

FINAL date 24-Sep-06

Yasunori (2007) - race pattern analysis of top Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198	time	6.01	9.83	13.67	17.51	21.55		25.70	29.94	34.26	38.68	43.24		48.36	/ 1			
reaction time	interval		3.82	3.84	3.84	4.04		4.15	4.24	4.32	4.42	4.56	5.12			11.50	12.43	13.30
	velocity	7.49	9.16	9.11	9.11	8.66		8.43	8.25	8.10	7.92	7.68	7.81	8.27		9.13	8.45	7.89
H1 lead leg	strides		13	13	13	13		13	13	13	13	13		117				
Kawakita, Naohiro (JPN) (19	time	6.06	9.83	13.63	17.57	21.66		26.04	30.41	34.88	39.47	44.09		49.30	/ 2			
reaction time	interval		3.77	3.80	3.94	4.09		4.38	4.37	4.47	4.59	4.62	5.21			11.51	12.84	13.68
	velocity	7.43	9.28	9.21	8.88	8.56		7.99	8.01	7.83	7.63	7.58	7.68	8.11		9.12	8.18	7.68
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Koike, Takayuki (JPN) (1984)	time	6.06	9.85	13.70	17.62	21.72		25.99	30.36	34.81	39.33	43.95		49.45	/ 3			
reaction time	interval		3.79	3.85	3.92	4.10		4.27	4.37	4.45	4.52	4.62	5.50			11.56	12.74	13.59
	velocity	7.43	9.23	9.09	8.93	8.54		8.20	8.01	7.87	7.74	7.58	7.27	8.09		9.08	8.24	7.73
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				
Chiba, Yoshihiro (JPN) (197	time	5.99	9.76	13.61	17.65	21.79		26.06	30.48	34.95	39.45	44.09		49.65	/ 5			
reaction time	interval		3.77	3.85	4.04	4.14		4.27	4.42	4.47	4.50	4.64	5.56			11.66	12.83	13.61
	velocity	7.51	9.28	9.09	8.66	8.45		8.20	7.92	7.83	7.78	7.54	7.19	8.06		9.01	8.18	7.71
H1 lead leg	strides		14	14	14	14		14	15	15	15	15		130				
Yoshikata, Masahira (JPN) (1	time	5.92	9.57	13.31	17.15	21.14		25.31	29.66	34.10	38.75	43.77		49.76	/ 6			
reaction time	interval		3.65	3.74	3.84	3.99		4.17	4.35	4.44	4.65	5.02	5.99			11.23	12.51	14.11
	velocity	7.60	9.59	9.36	9.11	8.77		8.39	8.05	7.88	7.53	6.97	6.68	8.04		9.35	8.39	7.44
H1 lead leg	strides		14	14	14	14		14	15	15	15	15		130				

2006 IAAF World Athletic Final (Stuttgart, GER) (TV Analysis)

FINAL date 10-Sep-06

Graubner (2008) - http://www.fgs.uni-halle.de

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Iakovákis, Periklís (GRE) (197		time	5.97	9.65	13.39	17.23	21.17		25.22	29.44	33.75	38.19	42.77		47.92	3 / 1			
reaction time	0.158	interval		3.68	3.74	3.84	3.94		4.05	4.22	4.31	4.44	4.58	5.15			11.26	12.21	13.33
		velocity	7.54	9.51	9.36	9.11	8.88		8.64	8.29	8.12	7.88	7.64	7.77	8.35		9.33	8.60	7.88
H1 lead leg		strides																	
van Zyl, L.J. (RSA) (1985)	0.159	no information available													48.08	6 / 2			
Jackson, Bershawn (USA) (1	0.134	no information available													48.24	5 / 3			
Carter, James (USA) (1978)	0.211	no information available													48.41	4 / 4			
Thompson, Kemel (JAM) (19	0.139	no information available													48.61	8 / 5			
McFarlane, Danny (JAM) (19	0.178	no information available													48.73	7 / 6			
Keita, Naman (FRA) (1978)	0.234	no information available													49.40	2 / 7			
Myburgh, Alwyn (RSA) (198	0.145	no information available													49.47	1 / 8			

2006 European Championships (Göteborg, SWE)

FINAL date 10-Aug-06

Behm (2006) - Göteborg 2006: Le quatrache

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Iakovákis, Periklís (GRE) (197		time	5.8	9.4	13.0	16.8	20.7		24.7	29.0	33.4	37.8	42.8		48.46	/ 1			
reaction time		interval		3.6	3.6	3.8	3.9		4.0	4.3	4.4	4.4	5.0	5.66			11.00	12.20	13.80
		velocity	7.76	9.72	9.72	9.21	8.97		8.75	8.14	7.95	7.95	7.00	7.07	8.25		9.55	8.61	7.61
H1 lead leg	R	strides	21	13	13	13	13		14	14	14	14	15	19	163				
Plawgo, Marek (POL) (1981)		time	5.8	9.5	13.4	17.4	21.5		25.7	30.0	34.5	39.0	43.6		48.71	/ 2			
reaction time		interval		3.7	3.9	4.0	4.1		4.2	4.3	4.5	4.5	4.6	5.11			11.60	12.60	13.60
		velocity	7.76	9.46	8.97	8.75	8.54		8.33	8.14	7.78	7.78	7.61	7.83	8.21		9.05	8.33	7.72
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	18	159				
Williams, Rhys (GBR) (1984)		time	5.9	9.7	13.5	17.7	21.8		26.0	30.2	34.6	39.2	43.8		49.12	/ 3			
reaction time		interval		3.8	3.8	4.2	4.1		4.2	4.2	4.4	4.6	4.6	5.32			11.80	12.50	13.60
		velocity	7.63	9.21	9.21	8.33	8.54		8.33	8.33	7.95	7.61	7.61	7.52	8.14		8.90	8.40	7.72
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	19	171				
Keïta, Naman (FRA) (1978)		time	5.9	9.4	13.1	17.0	20.9		25.0	29.5	34.0	38.7	43.5		49.13	/ 4			
reaction time		interval		3.5	3.7	3.9	3.9		4.1	4.5	4.5	4.7	4.8	5.63			11.10	12.50	14.00
		velocity	7.63	10.00	9.46	8.97	8.97		8.54	7.78	7.78	7.45	7.29	7.10	8.14		9.46	8.40	7.50
H1 lead leg	R	strides	20	12	12	12	12		13	13	14	14	14		136				
Maillard, Sébastien (FRA) (1!		time	6.0	9.7	13.5	17.6	21.7		25.9	30.2	34.5	39.1	43.9		49.54	/ 5			
reaction time		interval		3.7	3.8	4.1	4.1		4.2	4.3	4.3	4.6	4.8	5.64			11.60	12.60	13.70
		velocity	7.50	9.46	9.21	8.54	8.54		8.33	8.14	8.14	7.61	7.29	7.09	8.07		9.05	8.33	7.66
H1 lead leg	L	strides	21	13	14	14	14		14	15	15	15	15	19.5	169.5				
Carabelli, Gianni (ITA) (1979)		time	5.9	9.7	13.5	17.3	21.3		25.4	29.7	34.3	38.8	43.6		49.60	/ 6			
reaction time		interval		3.8	3.8	3.8	4.0		4.1	4.3	4.6	4.5	4.8	6.00			11.40	12.40	13.90
		velocity	7.63	9.21	9.21	9.21	8.75		8.54	8.14	7.61	7.78	7.29	6.67	8.06		9.21	8.47	7.55
H1 lead leg	R	strides	20	13	13	13	13		13	14	14	14	15	18.5	160.5				
Alozíds, Minás (GRE) (1984)		time	5.9	9.5	13.4	17.4	21.4		25.5	29.7	34.3	38.9	43.8		49.61	/ 7			
reaction time		interval		3.6	3.9	4.0	4.0		4.1	4.2	4.6	4.6	4.9	5.81			11.50	12.30	14.10
		velocity	7.63	9.72	8.97	8.75	8.75		8.54	8.33	7.61	7.61	7.14	6.88	8.06		9.13	8.54	7.45
H1 lead leg	L	strides	21	13	13	13	14		14	15	15	15	16		149				
Derevyagn, Aleksandr (RUS)		time	5.9	9.7	13.6	17.6	21.7		26.0	30.4	34.7	39.4	44.2		50.31	/ 8			
reaction time		interval		3.8	3.9	4.0	4.1		4.3	4.4	4.3	4.7	4.8	6.11			11.70	12.80	13.80
		velocity	7.63	9.21	8.97	8.75	8.54		8.14	7.95	8.14	7.45	7.29	6.55	7.95		8.97	8.20	7.61
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15	18.5	170.5				

2006 Japanese National Championships (Kobe, JPN)

FINAL date 01-Jul-06

Yasunori (2007) - race pattern analysis of top Japanese 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)		time	6.07	9.82	13.61	17.51	21.46		25.60	30.02	34.52	39.11	43.75		48.95	/ 1			
reaction time		interval		3.75	3.79	3.90	3.95		4.14	4.42	4.50	4.59	4.64	5.20			11.44	12.51	13.73
		velocity	7.41	9.33	9.23	8.97	8.86		8.45	7.92	7.78	7.63	7.54	7.69	8.17		9.18	8.39	7.65
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				
Suguimati, Mahau (JPN) (19!		time	6.25	10.12	13.96	17.95	22.00		26.27	30.62	35.12	39.71	44.31		49.63	/ 2			
reaction time		interval		3.87	3.84	3.99	4.05		4.27	4.35	4.50	4.59	4.60	5.32	PB		11.70	12.67	13.69
		velocity	7.20	9.04	9.11	8.77	8.64		8.20	8.05	7.78	7.63	7.61	7.52	8.06		8.97	8.29	7.67
H1 lead leg		strides		12	12	12	12		13	13	13	13	13		113				
Kawakita, Naohiro (JPN) (19!		time	6.16	10.01	13.95	17.94	22.01		26.25	30.69	35.33	39.98	44.63		49.70	/ 3			
reaction time		interval		3.85	3.94	3.99	4.07		4.24	4.44	4.64	4.65	4.65	5.07			11.78	12.75	13.94
		velocity	7.31	9.09	8.88	8.77	8.60		8.25	7.88	7.54	7.53	7.53	7.89	8.05		8.91	8.24	7.53
H1 lead leg		strides		13	13	13	13		14	14	15	15	15		125				

2006 USATF National Championships (Indianapolis, IN)

FINAL date 24-Jun-06

USATF Men's Hurdle Development (2006)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198!		time	5.97	9.65	13.38	17.15	21.05		25.06	29.19	33.40	37.80	42.41		47.39	4 / 1			
reaction time		interval		3.68	3.73	3.77	3.90		4.01	4.13	4.21	4.40	4.61	4.98			11.18	12.04	13.22
		velocity	7.54	9.51	9.38	9.28	8.97		8.73	8.47	8.31	7.95	7.59	8.03	8.44		9.39	8.72	7.94
H1 lead leg	R	strides	20	13	13	13	13		13	13	13	13	15	17	156				
Jackson, Bershawn (USA) (1		time	5.72	9.49	13.31	17.25	21.29		25.16	29.23	33.32	37.64	42.16		47.48	6 / 2			
reaction time		interval		3.77	3.82	3.94	4.04		3.87	4.07	4.09	4.32	4.52	5.32			11.53	11.98	12.93
		velocity	7.87	9.28	9.16	8.88	8.66		9.04	8.60	8.56	8.10	7.74	7.52	8.42		9.11	8.76	8.12
H1 lead leg	L	strides	23	15	15	15	15		15	15	15	15	15	19.7	177.7				
Carter, James (USA) (1978)		time	5.99	9.76	13.58	17.45	21.46		25.53	29.76	34.07	38.52	43.11		48.44	3 / 3			
reaction time		interval		3.77	3.82	3.87	4.01		4.07	4.23	4.31	4.45	4.59	5.33			11.46	12.31	13.35
		velocity	7.51	9.28	9.16	9.04	8.73		8.60	8.27	8.12	7.87	7.63	7.50	8.26		9.16	8.53	7.87
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17	159				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Woody, Joey (USA) (1973)	time	6.09	9.78	13.55	17.38	21.34	25.39	29.70	34.12	38.67	43.47		49.12	5 / 4			
reaction time	interval		3.69	3.77	3.83	3.96	4.05	4.31	4.42	4.55	4.80	5.65			11.29	12.32	13.77
	velocity	7.39	9.49	9.28	9.14	8.84	8.64	8.12	7.92	7.69	7.29	7.08	8.14		9.30	8.52	7.63
H1 lead leg R	strides	21	13	13	13	13	13	14	14	15	15	19	163				
Garrett, LaBronze (USA) (19	time	5.94	9.83	13.73	17.67	21.67	25.87	30.10	34.54	39.14	43.74		49.47	2 / 5			
reaction time	interval		3.89	3.90	3.94	4.00	4.20	4.23	4.44	4.60	4.60	5.73			11.73	12.43	13.64
	velocity	7.58	9.00	8.97	8.88	8.75	8.33	8.27	7.88	7.61	7.61	6.98	8.09		8.95	8.45	7.70
H1 lead leg L	strides	21	13	13	13	13	14	14	15	15	15		146				
Tinsley, Michael (USA) (1984	time	6.01	9.76	12.48	17.42	21.49	25.79	30.18	34.75	39.34	44.06		49.68	8 / 6			
reaction time	interval		3.75	2.72	4.94	4.07	4.30	4.39	4.57	4.59	4.72	5.62			11.41	12.76	13.88
	velocity	7.49	9.33	12.87	7.09	8.60	8.14	7.97	7.66	7.63	7.42	7.12	8.05		9.20	8.23	7.56
H1 lead leg R	strides	22	14	14	14	14	14	14	15	15	15		151				
Ferguson, Kenneth (USA) (1	time	5.86	9.61	13.46	17.35	21.41	25.66	30.03	34.60	39.34	44.56		50.76	1 / 7			
reaction time	interval		3.75	3.85	3.89	4.06	4.25	4.37	4.57	4.74	5.22	6.20			11.49	12.68	14.53
	velocity	7.68	9.33	9.09	9.00	8.62	8.24	8.01	7.66	7.38	6.70	6.45	7.88		9.14	8.28	7.23
H1 lead leg L	strides	22	13	15	13	13	15	15	15	15	15		151				
Williams, Derrick (USA) (198	time	5.92	9.61	13.48	17.35	21.34	25.51	29.81	34.23	38.79	43.63		dnf	7 / --			
reaction time	interval		3.69	3.87	3.87	3.99	4.17	4.30	4.42	4.56	4.84				11.43	12.46	13.82
	velocity	7.60	9.49	9.04	9.04	8.77	8.39	8.14	7.92	7.68	7.23				9.19	8.43	7.60
H1 lead leg R	strides	22	14	14	14	14	15	15	15	15	16		154				

2006 Asian Grand Prix (Bengaluru, IND)

FINAL date 22-May-06

Meng (2009) - a comparative study on rhythm changes between hurdles of chinese and foreign 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Meng Yan (CHN) (1980)	time	5.85	9.60	13.47	17.52	21.62		25.87	30.25	34.70	39.20	43.83		49.03	/ 1			
reaction time	interval		3.75	3.87	4.05	4.10		4.25	4.38	4.45	4.50	4.63	5.20	NR PB		11.67	12.73	13.58
	velocity	7.69	9.33	9.04	8.64	8.54		8.24	7.99	7.87	7.78	7.56	7.69	8.16		9.00	8.25	7.73
H1 lead leg	strides	21	13	13	13	13		13	14	14	15	15	18	162				

2006 Osaka Grand Prix (Osaka, JPN)

FINAL date 06-May-06

Yasunori (2007) - race pattern analysis of top Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Jackson, Bershawn (USA) (1	time	6.04	10.06	14.15	18.29	22.36		26.28	30.22	34.22	38.43	42.73		47.60	/ 1			
reaction time	interval		4.02	4.09	4.14	4.07		3.92	3.94	4.00	4.21	4.30	4.87			12.25	11.93	12.51
	velocity	7.45	8.71	8.56	8.45	8.60		8.93	8.88	8.75	8.31	8.14	8.21	8.40		8.57	8.80	8.39
H1 lead leg	strides		15	15	15	15		15	15	15	15	15		135				
Iakovákis, Periklís (GRE) (197	time	6.06	9.70	13.44	17.21	21.04		25.08	29.23	33.49	37.93	42.60		47.82	/ 2			
reaction time	interval		3.64	3.74	3.77	3.83		4.04	4.15	4.26	4.44	4.67	5.22	NR		11.15	12.02	13.37
	velocity	7.43	9.62	9.36	9.28	9.14		8.66	8.43	8.22	7.88	7.49	7.66	8.36		9.42	8.74	7.85
H1 lead leg	strides		13	13	13	13		14	14	14	14	15		123				
Narisako, Kenji (JPN) (1984)	time	5.95	9.63	13.41	17.23	21.10		25.12	29.44	33.77	38.17	42.72		47.93	/ 3			
reaction time	interval		3.68	3.78	3.82	3.87		4.02	4.32	4.33	4.40	4.55	5.21	PB		11.28	12.21	13.28
	velocity	7.56	9.51	9.26	9.16	9.04		8.71	8.10	8.08	7.95	7.69	7.68	8.35		9.31	8.60	7.91
H1 lead leg	strides		13	13	13	13		13	14	14	15	15		123				
Chiba, Yoshihiro (JPN) (1979	time	6.04	9.79	13.56	17.45	21.40		25.46	29.61	33.95	38.47	43.22		48.83	/ 5			
reaction time	interval		3.75	3.77	3.89	3.95		4.06	4.15	4.34	4.52	4.75	5.61			11.41	12.16	13.61
	velocity	7.45	9.33	9.28	9.00	8.86		8.62	8.43	8.06	7.74	7.37	7.13	8.19		9.20	8.63	7.71
H1 lead leg	strides		14	14	14	14		14	15	15	15	15		130				
Yoshikata, Masahira (JPN) (1	time	6.00	9.74	13.58	17.45	21.42		25.56	29.81	34.18	38.70	43.42		48.93	/ 6			
reaction time	interval		3.74	3.84	3.87	3.97		4.14	4.25	4.37	4.52	4.72	5.51			11.45	12.36	13.61
	velocity	7.50	9.36	9.11	9.04	8.82		8.45	8.24	8.01	7.74	7.42	7.26	8.17		9.17	8.50	7.71
H1 lead leg	strides		14	14	14	14		14	15	15	15	15		130				
Kawakita, Naohiro (JPN) (19	time	6.12	9.89	13.78	17.67	21.67		25.81	30.20	34.70	39.36	44.01		49.25	/ 7			
reaction time	interval		3.77	3.89	3.89	4.00		4.14	4.39	4.50	4.66	4.65	5.24	PB		11.55	12.53	13.81
	velocity	7.35	9.28	9.00	9.00	8.75		8.45	7.97	7.78	7.51	7.53	7.63	8.12		9.09	8.38	7.60
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				

2005 Seiko Super Grand Prix (Yokohama, JPN)

FINAL date 19-Sep-05

Yasunori (2006) - race pattern analysis of top Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Jackson, Bershawn (USA) (1	time	5.92	9.89	14.08	18.27	22.36		26.30	30.30	34.49	38.76	43.15		48.24	/ 1			
reaction time	interval		3.97	4.19	4.19	4.09		3.94	4.00	4.19	4.27	4.39	5.09			12.35	12.03	12.85
	velocity	7.60	8.82	8.35	8.35	8.56		8.88	8.75	8.35	8.20	7.97	7.86	8.29		8.50	8.73	8.17
H1 lead leg	strides		15	15	15	15		15	15	15	15	15		135				
Narisako, Kenji (JPN) (1984)	time	6.08	9.81	13.68	17.56	21.51		25.56	29.88	34.23	38.67	43.22		48.40	/ 2			
reaction time	interval		3.73	3.87	3.88	3.95		4.05	4.32	4.35	4.44	4.55	5.18			11.48	12.32	13.34
	velocity	7.40	9.38	9.04	9.02	8.86		8.64	8.10	8.05	7.88	7.69	7.72	8.26		9.15	8.52	7.87
H1 lead leg	strides		13	13	13	13		13	14	14	15	15		123				

Yoshikata, Masahira (JPN) (1	time	5.96	9.71	13.63	17.55	21.60	25.72	29.92	34.16	38.53	43.13		48.66	/ 3				
reaction time	interval		3.75	3.92	3.92	4.05	4.12	4.20	4.24	4.37	4.60	5.53	PB		11.59	12.37	13.21	
	velocity	7.55	9.33	8.93	8.93	8.64	8.50	8.33	8.25	8.01	7.61	7.23	8.22		9.06	8.49	7.95	
H1 lead leg	strides		14	14	14	14	14	15	15	15	15		130					
Shogata, Kazuya (JPN) (198	time	5.94	9.81	13.80	17.82	21.89	26.03	30.30	34.69	39.18	43.75		48.95	/ 5				
reaction time	interval		3.87	3.99	4.02	4.07	4.14	4.27	4.39	4.49	4.57	5.20	PB		11.88	12.48	13.45	
	velocity	7.58	9.04	8.77	8.71	8.60	8.45	8.20	7.97	7.80	7.66	7.69	8.17		8.84	8.41	7.81	
H1 lead leg	strides		14	14	14	14	15	15	15	15	15		131					

2005 IAAF World Championships (Helsinki, FIN)

FINAL

date 09-Aug-05

Yasunori (2006) - race pattern analysis of top Japanese 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Jackson, Bershawn (USA) (1		time	5.73	9.50	13.30	17.34	21.41		25.38	29.42	33.59	37.86	42.25		47.30	6 / 1			
reaction time	0.153	interval		3.77	3.80	4.04	4.07		3.97	4.04	4.17	4.27	4.39	5.05	PB		11.61	12.08	12.83
		velocity	7.85	9.28	9.21	8.66	8.60		8.82	8.66	8.39	8.20	7.97	7.92	8.46		9.04	8.69	8.18
H1 lead leg		strides		13	13	15	15		15	15	15	15	15	19	150				
Carter, James (USA) (1978)	0.144	no information available												PB	48.18	3 / 2			
Tamesue, Dai (JPN) (1978)		time	5.79	9.38	13.08	16.92	20.82		24.87	29.01	33.35	37.94	42.68		48.10	7 / 3			
reaction time	0.189	interval		3.59	3.70	3.84	3.90		4.05	4.14	4.34	4.59	4.74	5.42			11.13	12.09	13.67
		velocity	7.77	9.75	9.46	9.11	8.97		8.64	8.45	8.06	7.63	7.38	7.38	8.32		9.43	8.68	7.68
H1 lead leg		strides		13	13	13	13		14	14	15	15	15	17.5	142.5				
Clement, Kerron (USA) (198	0.201	no information available													48.18	1 / 4			
Keïta, Naman (FRA) (1978)	0.172	no information available													48.28	8 / 5			
van Zyl, L.J. (RSA) (1985)	0.177	no information available													48.54	4 / 6			
Kamani Bayano (PAN) (1980	0.180	no information available													50.18	5 / 7			
Sánchez, Félix (DOM) (1977)		no information available													dnf	2 / --			

Semi-Final 2

date 07-Aug-05

Yasunori (2006) - race pattern analysis of top Japanese 400m hurdlers

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Narisako, Kenji (JPN) (1984)		time	6.08	9.88	13.77	17.69	21.66		25.75	30.07	34.47	39.02	43.64		49.00	1 / 3			
reaction time	0.158	interval		3.80	3.89	3.92	3.97		4.09	4.32	4.40	4.55	4.62	5.36			11.61	12.38	13.57
		velocity	7.40	9.21	9.00	8.93	8.82		8.56	8.10	7.95	7.69	7.58	7.46	8.16		9.04	8.48	7.74
H1 lead leg		strides		13	13	13	13		13	14	14	15	15		123				

2005 NCAA Championships (Sacramento, CA)

Shaver (2008) - hurdle training

FINAL

date 11-Jun-05

gh (2005) - trackandfieldnews.com forum

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Clement, Kerron (USA) (198		time	5.9	9.5	13.2	17.1	21.0		25.0	29.2	33.6	38.2	42.8		47.56	6 / 1			*gh (2005)*
reaction time		interval		3.60	3.70	3.90	3.90		4.00	4.20	4.40	4.60	4.60	4.76			11.20	12.10	13.60
		velocity	7.63	9.72	9.46	8.97	8.97		8.75	8.33	7.95	7.61	7.61	8.40	8.41		9.38	8.68	7.72
H1 lead leg	R	strides	22	13	13	13	13		13	13	15	15	15	16.7	161.7				
Brazell, Bennie (USA) (1982)		time	6.06	9.76	13.60	17.45	21.34		25.37	29.59	33.85	38.23	42.64		47.67	5 / 2			*Shaver (2008)*
reaction time		interval		3.70	3.84	3.85	3.89		4.03	4.22	4.26	4.38	4.41	5.03	PB		11.39	12.14	13.05
		velocity	7.43	9.46	9.11	9.09	9.00		8.68	8.29	8.22	7.99	7.94	7.95	8.39		9.22	8.65	8.05
H1 lead leg	L	strides	22	13	13	13	13		13	15	15	15	16	19	167				

2005 Japanese National Championships (Tokyo, JPN)

FINAL

date 04-Jun-05

Yasunori (2006) - race pattern analysis of top Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)	time	5.83	9.53	13.40	17.34	21.43		25.58	29.87	34.39	39.04	43.83		49.27	/ 1			
reaction time	interval		3.70	3.87	3.94	4.09		4.15	4.29	4.52	4.65	4.79	5.44			11.51	12.53	13.96
	velocity	7.72	9.46	9.04	8.88	8.56		8.43	8.16	7.74	7.53	7.31	7.35	8.12		9.12	8.38	7.52
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Narisako, Kenji (JPN) (1984)	time	6.06	9.86	13.76	17.73	21.83		26.15	30.49	35.06	39.58	44.18		49.44	/ 2			
reaction time	interval		3.80	3.90	3.97	4.10		4.32	4.34	4.57	4.52	4.60	5.26			11.67	12.76	13.69
	velocity	7.43	9.21	8.97	8.82	8.54		8.10	8.06	7.66	7.74	7.61	7.60	8.09		9.00	8.23	7.67
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Kawakita, Naohiro (JPN) (19	time	6.14	10.06	14.06	18.10	22.22		26.52	31.07	35.71	40.40	45.24		50.66	/ 3			
reaction time	interval		3.92	4.00	4.04	4.12		4.30	4.55	4.64	4.69	4.84	5.42			11.96	12.97	14.17
	velocity	7.33	8.93	8.75	8.66	8.50		8.14	7.69	7.54	7.46	7.23	7.38	7.90		8.78	8.10	7.41
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				

2005 Osaka Grand Prix (Osaka, JPN)

FINAL

date 07-May-05

Yasunori (2006) - race pattern analysis of top Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Carter, James (USA) (1978)	time	5.77	9.47	13.21	17.13	21.23		25.48	29.82	34.26	38.71	43.25		48.42	/ 1			
reaction time	interval		3.70	3.74	3.92	4.10		4.25	4.34	4.44	4.45	4.54	5.17			11.36	12.69	13.43
	velocity	7.80	9.46	9.36	8.93	8.54		8.24	8.06	7.88	7.87	7.71	7.74	8.26		9.24	8.27	7.82
H1 lead leg	strides		13	13	13	13		14	14	14	14	14		122				
Narisako, Kenji (JPN) (1984)	time	5.99	9.68	13.45	17.25	21.24		25.39	29.81	34.25	38.77	43.37		48.71	/ 3			

reaction time	interval		3.69	3.77	3.80	3.99	4.15	4.42	4.44	4.52	4.60	5.34			11.26	12.56	13.56
	velocity	7.51	9.49	9.28	9.21	8.77	8.43	7.92	7.88	7.74	7.61	7.49	8.21		9.33	8.36	7.74
H1 lead leg	strides		13	13	13	13	13	14	14	15	15		123				
Tamesue, Dai (JPN) (1978)	time	5.84	9.51	13.25	17.09	21.01	25.11	29.33	33.78	38.38	43.17		48.72	/ 4			
reaction time	interval		3.67	3.74	3.84	3.92	4.10	4.22	4.45	4.60	4.79	5.55			11.25	12.24	13.84
	velocity	7.71	9.54	9.36	9.11	8.93	8.54	8.29	7.87	7.61	7.31	7.21	8.21		9.33	8.58	7.59
H1 lead leg	strides		13	13	13	13	14	14	15	15	15		125				
Yoshikata, Masahira (JPN) (1	time	5.99	9.69	13.54	17.49	21.58	25.90	30.32	34.82	39.36	44.00		49.52	/ 6			
reaction time	interval		3.70	3.85	3.95	4.09	4.32	4.42	4.50	4.54	4.64	5.52			11.50	12.83	13.68
	velocity	7.51	9.46	9.09	8.86	8.56	8.10	7.92	7.78	7.71	7.54	7.25	8.08		9.13	8.18	7.68
H1 lead leg	strides		14	14	14	14	15	15	15	15	15		131				

2004 Seiko Super Grand Prix (Yokohama, JPN)

FINAL date 23-Sep-04

Yasunori (2005) - race pattern analysis of top Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)	time	5.86	9.48	13.27	17.16	21.16		25.31	29.51	33.93	38.50	43.15		48.59	/ 1			
reaction time	interval		3.62	3.79	3.89	4.00		4.15	4.20	4.42	4.57	4.65	5.44			11.30	12.35	13.64
	velocity	7.68	9.67	9.23	9.00	8.75		8.43	8.33	7.92	7.66	7.53	7.35	8.23		9.29	8.50	7.70
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Narisako, Kenji (JPN) (1984)	time	5.99	9.63	13.43	17.37	21.37		25.52	29.91	34.36	38.91	43.58		49.07	/ 4			
reaction time	interval		3.64	3.80	3.94	4.00		4.15	4.39	4.45	4.55	4.67	5.49	PB		11.38	12.54	13.67
	velocity	7.51	9.62	9.21	8.88	8.75		8.43	7.97	7.87	7.69	7.49	7.29	8.15		9.23	8.37	7.68
H1 lead leg	strides		13	13	13	13		13	15	15	15	15		125				

2004 Olympic Games (Athîna, GRE)

Behm (2005) - Athènes 2004: Les Haies Basses

FINAL date 26-Aug-04

Ruiz (2004) - las carreras con vallas de juegos olimpicos de atenas '04

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Sánchez, Felix (DOM) (1977)		time	5.81	9.36	13.07	16.90	20.87		24.96	29.15	33.42	37.74	42.21		47.63	6 / 1			*Ruiz (2004)*
reaction time	0.219	interval		3.55	3.71	3.83	3.97		4.09	4.19	4.27	4.32	4.47	5.42			11.09	12.25	13.06
		velocity	7.75	9.86	9.43	9.14	8.82		8.56	8.35	8.20	8.10	7.83	7.38	8.40		9.47	8.57	8.04
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18	164				
McFarlane, Danny (JAM) (19		time	6.02	9.52	13.23	17.17	21.19		25.21	29.50	33.62	38.23	42.88		48.11	5 / 2			*Ruiz (2004)*
reaction time	0.256	interval		3.50	3.71	3.94	4.02		4.02	4.29	4.12	4.61	4.65	5.23			11.15	12.33	13.38
		velocity	7.48	10.00	9.43	8.88	8.71		8.71	8.16	8.50	7.59	7.53	7.65	8.31		9.42	8.52	7.85
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	15	18	161				
Keïta, Naman, (FRA) (1978)		time	6.00	9.62	13.46	17.26	21.41		25.50	29.68	33.99	38.32	42.92		48.26	7 / 3			*Ruiz (2004)*
reaction time	0.268	interval		3.62	3.84	3.80	4.15		4.09	4.18	4.31	4.33	4.60	5.34			11.26	12.42	13.24
		velocity	7.50	9.67	9.11	9.21	8.43		8.56	8.37	8.12	8.08	7.61	7.49	8.29		9.33	8.45	7.93
H1 lead leg	R	strides	20	12	12	12	13		13	13	13	13	13	17	151				
Carter, James (USA) (1978)		time	5.78	9.29	13.10	16.76	20.70		24.69	28.96	33.29	37.80	42.71		48.58	4 / 4			*Ruiz (2004)*
reaction time	0.223	interval		3.51	3.81	3.66	3.94		3.99	4.27	4.33	4.51	4.91	5.87			10.98	12.20	13.75
		velocity	7.79	9.97	9.19	9.56	8.88		8.77	8.20	8.08	7.76	7.13	6.81	8.23		9.56	8.61	7.64
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	15	18	161				
Kamani, Bayano (PAN) (198		time	5.9	9.5	13.2	17.0	21.1		25.1	29.3	33.9	38.3	42.9		48.74	2 / 5			*Behm (2005)*
reaction time	0.233	interval		3.6	3.7	3.8	4.1		4.0	4.2	4.6	4.4	4.6	5.84			11.10	12.30	13.60
		velocity	7.63	9.72	9.46	9.21	8.54		8.75	8.33	7.61	7.95	7.61	6.85	8.21		9.46	8.54	7.72
H1 lead leg	L	strides	20	13	13	13	14		14	15	15	15	15	19	166				
Plawgo, Marek (POL) (1981)		time	6.0	9.6	13.3	17.2	21.2		25.3	29.8	34.3	38.9	43.7		49.00	3 / 6			*Behm (2005)*
reaction time	0.242	interval		3.6	3.7	3.9	4.0		4.1	4.5	4.5	4.6	4.8	5.30			11.20	12.60	13.90
		velocity	7.50	9.72	9.46	8.97	8.75		8.54	7.78	7.78	7.61	7.29	7.55	8.16		9.38	8.33	7.55
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15		143				
Myburgh, Alwyn (RSA) (198		time	5.9	9.5	13.2	17.0	21.2		25.3	29.4	33.9	38.5	43.3		49.07	1 / 7			*Behm (2005)*
reaction time	0.150	interval		3.6	3.7	3.8	4.2		4.1	4.1	4.5	4.6	4.8	5.77			11.10	12.40	13.90
		velocity	7.63	9.72	9.46	9.21	8.33		8.54	8.54	7.78	7.61	7.29	6.93	8.15		9.46	8.47	7.55
H1 lead leg	R	strides	21	14	14	14	14		14	14	15	15	15	19	169				
Brazell, Bennie (USA) (1982)		time	6.0	9.6	13.3	17.1	21.1		25.2	29.4	33.7	38.3	43.1		49.51	8 / 8			*Behm (2005)*
reaction time	0.390	interval		3.6	3.7	3.8	4.0		4.1	4.2	4.3	4.6	4.8	6.41			11.10	12.30	13.70
		velocity	7.50	9.72	9.46	9.21	8.75		8.54	8.33	8.14	7.61	7.29	6.24	8.08		9.46	8.54	7.66
H1 lead leg	L	strides	22	13	13	13	14		14	14	15	15	16		149				

2004 Japanese National Championships (Tottori, JPN)

FINAL date 05-Jun-04

Yasunori (2005) - race pattern analysis of top Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)	time	5.82	9.49	13.19	17.04	21.04		25.21	29.46	33.88	38.50	43.22		48.74	/ 1			
reaction time	interval		3.67	3.70	3.85	4.00		4.17	4.25	4.42	4.62	4.72	5.52			11.22	12.42	13.76
	velocity	7.73	9.54	9.46	9.09	8.75		8.39	8.24	7.92	7.58	7.42	7.25	8.21		9.36	8.45	7.63
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Yoshizawa, Ken (JPN) (1978)	time	5.96	9.65	13.45	17.39	21.49		25.78	30.17	34.62	39.21	44.01		49.63	/ 2			

reaction time	interval		3.69	3.80	3.94	4.10	4.29	4.39	4.45	4.59	4.80	5.62			11.43	12.78	13.84
	velocity	7.55	9.49	9.21	8.88	8.54	8.16	7.97	7.87	7.63	7.29	7.12	8.06		9.19	8.22	7.59
H1 lead leg	strides		13	13	13	13	14	14	15	15	15		125				
Kawamura, Hideaki (JPN) (19	time	5.97	9.77	13.64	17.68	21.92	26.27	30.72	35.16	39.70	44.34		49.66	/ 3			
reaction time	interval		3.80	3.87	4.04	4.24	4.35	4.45	4.44	4.54	4.64	5.32			11.71	13.04	13.62
	velocity	7.54	9.21	9.04	8.66	8.25	8.05	7.87	7.88	7.71	7.54	7.52	8.05		8.97	8.05	7.71
H1 lead leg	strides		14	14	14	14	15	15	15	15	15		131				
Narisako, Kenji (JPN) (1984)	time	6.02	9.79	13.61	17.61	21.76	26.20	30.57	35.06	39.65	44.34		49.80	/ 4			
reaction time	interval		3.77	3.82	4.00	4.15	4.44	4.37	4.49	4.59	4.69	5.46			11.59	12.96	13.77
	velocity	7.48	9.28	9.16	8.75	8.43	7.88	8.01	7.80	7.63	7.46	7.33	8.03		9.06	8.10	7.63
H1 lead leg	strides		13	13	13	13	14	14	15	15	15		125				

2004 Osaka Grand Prix (Osaka, JPN)

FINAL date 08-May-04

Yasunori (2005) - race pattern analysis of top Japanese 400m hurdlers

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)	time	5.77	9.41	13.20	17.07	21.06		25.25	29.45	33.87	38.51	43.31		48.87	/ 1			
reaction time	interval		3.64	3.79	3.87	3.99		4.19	4.20	4.42	4.64	4.80	5.56			11.30	12.38	13.86
	velocity	7.80	9.62	9.23	9.04	8.77		8.35	8.33	7.92	7.54	7.29	7.19	8.18		9.29	8.48	7.58
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				
Yoshikata, Masahira (JPN) (1	time	5.86	9.71	13.65	17.69	21.84		26.08	30.32	34.64	39.16	43.86		49.37	/ 5			
reaction time	interval		3.85	3.94	4.04	4.15		4.24	4.24	4.32	4.52	4.70	5.51	PB		11.83	12.63	13.54
	velocity	7.68	9.09	8.88	8.66	8.43		8.25	8.25	8.10	7.74	7.45	7.26	8.10		8.88	8.31	7.75
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				
Kawamura, Hideaki (JPN) (19	time	6.10	9.90	13.87	17.99	22.28		26.63	31.00	35.40	39.95	44.62		50.01	/ 6			
reaction time	interval		3.80	3.97	4.12	4.29		4.35	4.37	4.40	4.55	4.67	5.39			11.89	13.01	13.62
	velocity	7.38	9.21	8.82	8.50	8.16		8.05	8.01	7.95	7.69	7.49	7.42	8.00		8.83	8.07	7.71
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				
Chiba, Yoshihiro (JPN) (197	time	6.02	9.92	13.96	18.08	22.28		26.60	30.99	35.58	40.28	45.12		50.86	/ 9			
reaction time	interval		3.90	4.04	4.12	4.20		4.32	4.39	4.59	4.70	4.84	5.74			12.06	12.91	14.13
	velocity	7.48	8.97	8.66	8.50	8.33		8.10	7.97	7.63	7.45	7.23	6.97	7.86		8.71	8.13	7.43
H1 lead leg	strides		14	14	14	14		15	15	15	15	15		131				

2003 Chinese National Championships (Shanghai, CHN)

FINAL date 14-Sep-03

Zhou (2003) - training of Shao Yi, national champion of men's 400m hurdles

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shao Yi (CHN) (1979)	time	6.14	9.94	13.84	17.90	22.02		26.30	30.64	35.12	39.68	44.40		49.75	/ 1			
reaction time	interval		3.80	3.90	4.06	4.12		4.28	4.34	4.48	4.56	4.72	5.35	PB		11.76	12.74	13.76
	velocity	7.33	9.21	8.97	8.62	8.50		8.18	8.06	7.81	7.68	7.42	7.48	8.04		8.93	8.24	7.63
H1 lead leg	strides		13	13	14	14		14	14	14	14	15		125				

2003 IAAF World Championships (Paris, FRA)

FINAL date 29-Aug-03

Behm (2003) - Paris 2003:Le quatrache masculn - féminin

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Sánchez, Felix (DOM) (1977)		time	5.8	9.3	13.0	16.9	20.7		24.8	29.1	33.4	37.7	42.1		47.25	5 / 1			
reaction time	0.176	interval		3.5	3.7	3.9	3.8		4.1	4.3	4.3	4.3	4.4	5.15	AR / PB		11.10	12.20	13.00
		velocity	7.76	10.00	9.46	8.97	9.21		8.54	8.14	8.14	8.14	7.95	7.77	8.47		9.46	8.61	8.08
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Woody, Joey (USA) (1973)		time	5.9	9.5	13.4	17.2	21.0		25.3	29.5	33.7	38.2	42.8		48.18	6 / 2			
reaction time	0.167	interval		3.6	3.9	3.8	3.8		4.3	4.2	4.2	4.5	4.6	5.38			11.30	12.30	13.30
		velocity	7.63	9.72	8.97	9.21	9.21		8.14	8.33	8.33	7.78	7.61	7.43	8.30		9.29	8.54	7.89
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Iakovákis, Periklís (GRE) (197		time	5.9	9.5	13.2	17.1	21.0		25.0	29.4	33.8	38.3	42.9		48.24	4 / 3			
reaction time	0.174	interval		3.6	3.7	3.9	3.9		4.0	4.4	4.4	4.5	4.6	5.34			11.20	12.30	13.50
		velocity	7.63	9.72	9.46	8.97	8.97		8.75	7.95	7.95	7.78	7.61	7.49	8.29		9.38	8.54	7.78
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	15	18	160				
McFarlane, Danny (JAM) (19		time	5.9	9.6	13.5	17.3	21.2		25.3	29.6	33.9	38.5	43.1		48.30	7 / 4			
reaction time	0.165	interval		3.7	3.9	3.8	3.9		4.1	4.3	4.3	4.6	4.6	5.20	PB		11.40	12.30	13.50
		velocity	7.63	9.46	8.97	9.21	8.97		8.54	8.14	8.14	7.61	7.61	7.69	8.28		9.21	8.54	7.78
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	15	15	18	163				
Thompson, Kemel (JAM) (19		time	5.8	9.5	13.4	17.3	21.4		25.4	29.6	33.9	38.4	43.0		48.51	3 / 5			
reaction time	0.168	interval		3.7	3.9	3.9	4.1		4.0	4.2	4.3	4.5	4.6	5.51			11.50	12.30	13.40
		velocity	7.76	9.46	8.97	8.97	8.54		8.75	8.33	8.14	7.78	7.61	7.26	8.25		9.13	8.54	7.84
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Rawlinson, Christopher (GB		time	5.9	9.5	13.4	17.3	21.2		25.3	29.4	33.9	38.4	43.0		48.90	2 / 6			
reaction time	0.165	interval		3.6	3.9	3.9	3.9		4.1	4.1	4.5	4.5	4.6	5.90			11.40	12.10	13.60
		velocity	7.63	9.72	8.97	8.97	8.97		8.54	8.54	7.78	7.78	7.61	6.78	8.18		9.21	8.68	7.72
H1 lead leg	R	strides	20	13	13	13	13		13	13	15	15	15	19	162				
Al-Nubi, Mubarak Sultan (Q/		time	6.0	9.7	13.7	17.7	21.7		25.9	30.4	35.2	40.1	44.7		52.64	1 / 7			

reaction time	0.164	interval		3.7	4.0	4.0	4.0	4.2	4.5	4.8	4.9	4.6	7.94			11.70	12.70	14.30
		velocity	7.50	9.46	8.75	8.75	8.75	8.33	7.78	7.29	7.14	7.61	5.04	7.60		8.97	8.27	7.34
H1 lead leg	R	strides	21	13	13	13	13	13	13	15	15	15		144				
Herbert, Llewellyn (RSA) (19		time	6.1	9.8	13.7	17.6	21.6	25.5	29.6	33.7	38.0	42.8		72.10	8 / 8			
reaction time	0.149	interval		3.7	3.9	3.9	4.0	3.9	4.1	4.1	4.3	4.8	29.30			11.50	12.00	13.20
		velocity	7.38	9.46	8.97	8.97	8.75	8.97	8.54	8.54	8.14	7.29	1.37	5.55		9.13	8.75	7.95
H1 lead leg	R	strides	22	14	14	14	14	14	14	15	15	16		152				

Semi-Final 3

date 27-Aug-03

Behm (2003) - Paris 2003:Le quatrache masculn - féminin

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Maillard, Sébastien (FRA) (1!		time	5.9	9.6	13.4	17.3	21.4		25.6	30.0	34.6				50.70	8 / 8			
reaction time	0.186	interval		3.7	3.8	3.9	4.1		4.2	4.4	4.6			16.10			11.40	12.70	
		velocity	7.63	9.46	9.21	8.97	8.54		8.33	7.95	7.61			6.83	7.89		9.21	8.27	
H1 lead leg		strides	21	14	14	14	14		15	15	15	16	16	19.5	173.5				

Semi-Final 2

date 27-Aug-03

Behm (2003) - Paris 2003:Le quatrache masculn - féminin

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Keïta, Naman (FRA) (1978)		time	6.0	9.8	13.6	17.8	22.0		26.3	30.6	35.1	39.7			49.57	1 / 8			
reaction time	0.169	interval		3.8	3.8	4.2	4.2		4.3	4.3	4.5	4.6		9.87			11.80	12.80	
		velocity	7.50	9.21	9.21	8.33	8.33		8.14	8.14	7.78	7.61		7.60	8.07		8.90	8.20	
H1 lead leg		strides	21	12	12	13	12		13	13	13	13	14	17.5	153.5				

Semi-Final 1

date 27-Aug-03

Behm (2003) - Paris 2003:Le quatrache masculn - féminin

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (1!		time	5.8	9.5	13.3	17.2	21.2		25.3	29.5	33.9	38.5	43.1		48.64	2 / 5			
reaction time	0.163	interval		3.7	3.8	3.9	4.0		4.1	4.2	4.4	4.6	4.6	5.54			11.40	12.30	13.60
		velocity	7.76	9.46	9.21	8.97	8.75		8.54	8.33	7.95	7.61	7.61	7.22	8.22		9.21	8.54	7.72
H1 lead leg		strides	21	13	13	13	13		13	14	14	15	15	18	162				

Heat 4

date 26-Aug-03

Behm (2003) - Paris 2003:Le quatrache masculn - féminin

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Maillard, Sébastien (FRA) (1!		time	5.9	9.7	13.5	17.4	21.4		25.5	29.6	33.9	38.6	43.5		49.25	7 / 4			
reaction time	0.191	interval		3.8	3.8	3.9	4.0		4.1	4.1	4.3	4.7	4.9	5.75			11.50	12.20	13.90
		velocity	7.63	9.21	9.21	8.97	8.75		8.54	8.54	8.14	7.45	7.14	6.96	8.12		9.13	8.61	7.55
H1 lead leg		strides	21	14	14	14	14		15	15	15	16	16	19.5	173.5				

Heat 2

date 26-Aug-03

Behm (2003) - Paris 2003:Le quatrache masculn - féminin

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Keïta, Naman (FRA) (1978)		time	5.7	9.7	13.4	17.3	21.3		25.5	29.7	34.2	38.8	43.6		49.08	5 / 5			
reaction time	0.232	interval		4.0	3.7	3.9	4.0		4.2	4.2	4.5	4.6	4.8	5.48			11.60	12.40	13.90
		velocity	7.89	8.75	9.46	8.97	8.75		8.33	8.33	7.78	7.61	7.29	7.30	8.15		9.05	8.47	7.55
H1 lead leg		strides	21	12	12	13	12		13	13	13	13	14	17.5	153.5				

Heat 1

date 26-Aug-03

Behm (2003) - Paris 2003:Le quatrache masculn - féminin

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (1!		time	5.8	9.5	13.3	17.1	20.9		25.1	29.4	34.1	38.7	43.5		49.00	7 / 3			
reaction time	0.186	interval		3.7	3.8	3.8	3.8		4.2	4.3	4.7	4.6	4.8	5.50			11.30	12.30	14.10
		velocity	7.76	9.46	9.21	9.21	9.21		8.33	8.14	7.45	7.61	7.29	7.27	8.16		9.29	8.54	7.45
H1 lead leg		strides	21	13	13	13	13		13	14	14	15	15	18	162				

2003 USATF National Junior Championship (Palo Alto, CA)

FINAL

date 22-Jun-03

USATF Women's Sprint Development (2003)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Ferguson, Kenneth (USA) (1		time	6.34	10.39	14.51	18.73	23.14		27.36	31.39	35.60	39.96	44.68		50.70	7 / 1			
reaction time		interval		4.05	4.12	4.22	4.41		4.22	4.03	4.21	4.36	4.72	6.02			12.39	12.66	13.29
		velocity	7.10	8.64	8.50	8.29	7.94		8.29	8.68	8.31	8.03	7.42	6.64	7.89		8.47	8.29	7.90
H1 lead leg		strides																	
Walker, Adrian (USA) (1984)		time	6.09	9.96	13.91	17.92	22.09		26.39	31.00	35.70	40.44	45.56		51.73	4 / 2			
reaction time		interval		3.87	3.95	4.01	4.17		4.30	4.61	4.70	4.74	5.12	6.17			11.83	13.08	14.56
		velocity	7.39	9.04	8.86	8.73	8.39		8.14	7.59	7.45	7.38	6.84	6.48	7.73		8.88	8.03	7.21
H1 lead leg		strides																	
Willis, Matthew (USA) (1984)		time	6.09	10.06	14.31	18.52	22.79		27.34	32.10	36.87	41.59	46.46		51.89	2 / 3			
reaction time		interval		3.97	4.25	4.21	4.27		4.55	4.76	4.77	4.72	4.87	5.43			12.43	13.58	14.36
		velocity	7.39	8.82	8.24	8.31	8.20		7.69	7.35	7.34	7.42	7.19	7.37	7.71		8.45	7.73	7.31
H1 lead leg		strides																	
Burton, Jereme (USA) (1984)		time	6.16	10.04	14.01	18.00	22.21		26.56	31.08	35.80	40.79	45.91		51.92	5 / 4			
reaction time		interval		3.88	3.97	3.99	4.21		4.35	4.52	4.72	4.99	5.12	6.01	PB		11.84	13.08	14.83
		velocity	7.31	9.02	8.82	8.77	8.31		8.05	7.74	7.42	7.01	6.84	6.66	7.70		8.87	8.03	7.08
H1 lead leg		strides																	
Wilburn, Glenn (USA)		time	6.16	10.14	14.16	18.40	22.86		27.14	31.88	36.57	41.54	46.68		53.20	8 / 5			
reaction time		interval		3.98	4.02	4.24	4.46		4.28	4.74	4.69	4.97	5.14	6.52			12.24	13.48	14.80
		velocity	7.31	8.79	8.71	8.25	7.85		8.18	7.38	7.46	7.04	6.81	6.13	7.52		8.58	7.79	7.09
H1 lead leg		strides																	

Campbell, Basil (USA) (1985)	time	6.12	10.23	14.41	18.48	22.86		27.51	32.06	36.72	41.65	46.88		53.41	6 / 6			
reaction time	interval		4.11	4.18	4.07	4.38		4.65	4.55	4.66	4.93	5.23	6.53			12.36	13.58	14.82
	velocity	7.35	8.52	8.37	8.60	7.99		7.53	7.69	7.51	7.10	6.69	6.13	7.49		8.50	7.73	7.09
H1 lead leg	strides																	
Siwemuke, Marcus (USA) (19	time	6.17	10.12	14.21	18.42	22.87		27.41	32.20	37.15	42.22	47.48		53.44	9 / 7			
reaction time	interval		3.95	4.09	4.21	4.45		4.54	4.79	4.95	5.07	5.26	5.96			12.25	13.78	15.28
	velocity	7.29	8.86	8.56	8.31	7.87		7.71	7.31	7.07	6.90	6.65	6.71	7.49		8.57	7.62	6.87
H1 lead leg	strides																	
Ikwaukor, Akovunndu (USA)	time	6.01	9.88	13.93	18.01	22.30		27.03	31.70	36.62	41.81	47.31		54.25	3 / 8			
reaction time	interval		3.87	4.05	4.08	4.29		4.73	4.67	4.92	5.19	5.50	6.94			12.00	13.69	15.61
	velocity	7.49	9.04	8.64	8.58	8.16		7.40	7.49	7.11	6.74	6.36	5.76	7.37		8.75	7.67	6.73
H1 lead leg	strides																	
Rhodes, Calvin (USA)	time	6.16	10.41	14.68	19.10	23.67		28.43	33.30	38.17	43.18	48.43		54.53	1 / 9			
reaction time	interval		4.25	4.27	4.42	4.57		4.76	4.87	4.87	5.01	5.25	6.10			12.94	14.20	15.13
	velocity	7.31	8.24	8.20	7.92	7.66		7.35	7.19	7.19	6.99	6.67	6.56	7.34		8.11	7.39	6.94
H1 lead leg	strides																	

2003 USATF National Championships (Palo Alto, CA)

FINAL

date 22-Jun-03

USATF Women's Sprint Development (2003)

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Thomas, Eric (USA) (1973)	time	6.01	9.83	13.66	17.53	21.54		25.66	29.93	34.28	38.76	43.33		48.76	5 / ~~1~~			
reaction time	interval		3.82	3.83	3.87	4.01		4.12	4.27	4.35	4.48	4.57	5.43	DV		11.52	12.40	13.40
	velocity	7.49	9.16	9.14	9.04	8.73		8.50	8.20	8.05	7.81	7.66	7.37	8.20		9.11	8.47	7.84
H1 lead leg	strides																	
Jackson, Bershawn (USA) (1	time	5.97	9.84	13.85	17.92	22.04		26.18	30.30	34.47	38.91	43.56		49.01	4 / ~~2~~ 1			
reaction time	interval		3.87	4.01	4.07	4.12		4.14	4.12	4.17	4.44	4.65	5.45			11.95	12.38	13.26
	velocity	7.54	9.04	8.73	8.60	8.50		8.45	8.50	8.39	7.88	7.53	7.34	8.16		8.79	8.48	7.92
H1 lead leg	strides																	
Woody, Joey (USA) (1973)	time	5.87	9.66	13.50	17.47	21.54		25.68	30.06	34.42	38.96	43.61		49.22	3 / ~~3~~ 2			
reaction time	interval		3.79	3.84	3.97	4.07		4.14	4.38	4.36	4.54	4.65	5.61			11.60	12.59	13.55
	velocity	7.67	9.23	9.11	8.82	8.60		8.45	7.99	8.03	7.71	7.53	7.13	8.13		9.05	8.34	7.75
H1 lead leg	strides																	
Carter, James (USA) (1978)	time	5.82	9.64	13.61	17.68	22.01		26.39	30.70	35.10	39.52	44.03		49.23	6 / ~~4~~ 3			
reaction time	interval		3.82	3.97	4.07	4.33		4.38	4.31	4.40	4.42	4.51	5.20			11.86	13.02	13.33
	velocity	7.73	9.16	8.82	8.60	8.08		7.99	8.12	7.95	7.92	7.76	7.69	8.13		8.85	8.06	7.88
H1 lead leg	strides																	
Armstrong, Sherman (USA)	time	5.97	9.81	13.71	17.62	21.71		26.01	30.40	34.87	39.49	44.33		49.89	7 / ~~5~~ 4			
reaction time	interval		3.84	3.90	3.91	4.09		4.30	4.39	4.47	4.62	4.84	5.56			11.65	12.78	13.93
	velocity	7.54	9.11	8.97	8.95	8.56		8.14	7.97	7.83	7.58	7.23	7.19	8.02		9.01	8.22	7.54
H1 lead leg	strides																	
Nichols, Regan (USA) (1973)	time	5.99	9.88	13.88	17.89	21.91		26.24	30.56	35.08	39.66	44.45		50.08	8 / ~~6~~ 5			
reaction time	interval		3.89	4.00	4.01	4.02		4.33	4.32	4.52	4.58	4.79	5.63			11.90	12.67	13.89
	velocity	7.51	9.00	8.75	8.73	8.71		8.08	8.10	7.74	7.64	7.31	7.10	7.99		8.82	8.29	7.56
H1 lead leg	strides																	
Sharpe, Fred (USA) (1978)	time	6.09	10.13	14.26	18.30	22.67		27.03	31.50	36.02	40.61	45.20		50.41	2 / ~~7~~ 6			
reaction time	interval		4.04	4.13	4.04	4.37		4.36	4.47	4.52	4.59	4.59	5.21			12.21	13.20	13.70
	velocity	7.39	8.66	8.47	8.66	8.01		8.03	7.83	7.74	7.63	7.63	7.68	7.93		8.60	7.95	7.66
H1 lead leg	strides																	
Garrett, LaBronze (USA) (19	time	6.04	9.89	13.90	18.07	22.36		26.69	31.20	35.79	40.41	45.08		50.45	1 / ~~8~~ 7			
reaction time	interval		3.85	4.01	4.17	4.29		4.33	4.51	4.59	4.62	4.67	5.37			12.03	13.13	13.88
	velocity	7.45	9.09	8.73	8.39	8.16		8.08	7.76	7.63	7.58	7.49	7.45	7.93		8.73	8.00	7.56
H1 lead leg	strides																	

2003 ??? (Shanghai, CHN)

Heat 1

date 13-Jun-03

Zhou (2003) - training of Shao Yi, national champion of men's 400m hurdles

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shao Yi (CHN) (1979)	time	6.12	9.88	13.72	17.76	21.84		26.08	30.51	35.08	39.70	44.64		50.23	/ 1			
reaction time	interval		3.76	3.84	4.04	4.08		4.24	4.43	4.57	4.62	4.94	5.59	PB		11.64	12.75	14.13
	velocity	7.35	9.31	9.11	8.66	8.58		8.25	7.90	7.66	7.58	7.09	7.16	7.96		9.02	8.24	7.43
H1 lead leg	strides		13	13	14	14		14	14	15	15	15		127				

2002 Chinese National Grand Prix Final (Tiantai, CHN)

FINAL

date 27-Oct-02

Zhou (2003) - training of Shao Yi, national champion of men's 400m hurdles

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Shao Yi (CHN) (1979)	time	6.19	10.15	14.05	18.12	22.31		26.56	30.94	35.60	40.41	45.37		51.21	/ 2			
reaction time	interval		3.96	3.90	4.07	4.19		4.25	4.38	4.66	4.81	4.96	5.84	PB		11.93	12.82	14.43
	velocity	7.27	8.84	8.97	8.60	8.35		8.24	7.99	7.51	7.28	7.06	6.85	7.81		8.80	8.19	7.28
H1 lead leg	strides		14	14	14	14		14	14	15	15	15		129				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

2002 IAAF World Cup (Madrid, ESP)

FINAL date 20-Sep-02

Sanchez (2002) - copa del mundo de Madrid '02: análisis de la carreras con villas

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Carter, James (USA) (1978)		time	5.65	9.42	13.23	17.04	21.00		25.09	29.36	33.68	38.27	42.89		48.27	6 / 1			
reaction time	0.131	interval		3.77	3.81	3.81	3.96		4.09	4.27	4.32	4.59	4.62	5.38			11.39	12.32	13.53
		velocity	7.96	9.28	9.19	9.19	8.84		8.56	8.20	8.10	7.63	7.58	7.43	8.29		9.22	8.52	7.76
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.5	159.5				
Al-Nubi, Mubarak Sultan (Q/		time	6.07	9.94	13.80	17.77	21.88		25.99	30.15	34.51	38.87	43.63		48.96	7 / 2			
reaction time	0.158	interval		3.87	3.86	3.97	4.11		4.11	4.16	4.36	4.36	4.76	5.33			11.70	12.38	13.48
		velocity	7.41	9.04	9.07	8.82	8.52		8.52	8.41	8.03	8.03	7.35	7.50	8.17		8.97	8.48	7.79
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	13	15	16.5	156.5				
Rawlinson, Chris (GBR) (197		time	5.83	9.55	13.30	17.13	21.07		25.07	29.44	34.01	38.65	43.46		49.18	3 / 3			
reaction time	0.172	interval		3.72	3.75	3.83	3.94		4.00	4.37	4.57	4.64	4.81	5.72			11.30	12.31	14.02
		velocity	7.72	9.41	9.33	9.14	8.88		8.75	8.01	7.66	7.54	7.28	6.99	8.13		9.29	8.53	7.49
H1 lead leg	R	strides	22	14	14	14	14		14	14	15	15	15	19	170				
Muzik, Jirí (CZE) (1976)		time	6.08	9.93	13.91	17.81	21.94		26.05	30.23	34.65	39.23	43.86		49.28	4 / 4			
reaction time	0.185	interval		3.85	3.98	3.90	4.13		4.11	4.18	4.42	4.58	4.63	5.42			11.73	12.42	13.63
		velocity	7.40	9.09	8.79	8.97	8.47		8.52	8.37	7.92	7.64	7.56	7.38	8.12		8.95	8.45	7.70
H1 lead leg	L	strides	21	14	14	14	14		14	14	14	15	15	18.5	167.5				
Weakley, Ian (JAM) (1974)		time	6.02	9.74	13.72	17.73	21.84		26.08	30.49	34.95	39.53	44.17		49.62	1 / 5			
reaction time	0.187	interval		3.72	3.98	4.01	4.11		4.24	4.41	4.46	4.58	4.64	5.45			11.71	12.76	13.68
		velocity	7.48	9.41	8.79	8.73	8.52		8.25	7.94	7.85	7.64	7.54	7.34	8.06		8.97	8.23	7.68
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18.5	169.5				
Romera, José María (ESP) (1		time	5.85	9.62	13.39	17.23	21.21		25.32	29.69	34.15	38.91	43.85		49.68	8 / 6			
reaction time	0.147	interval		3.77	3.77	3.84	3.98		4.11	4.37	4.46	4.76	4.94	5.83			11.38	12.46	14.16
		velocity	7.69	9.28	9.28	9.11	8.79		8.52	8.01	7.85	7.35	7.09	6.86	8.05		9.23	8.43	7.42
H1 lead leg	R	strides	21	13	13	13	13		14	14	14	15	15	18.5	163.5				
Herbert, Llewellyn (RSA) (19		time	6.06	9.90	13.94	17.93	21.98		26.20	30.53	35.03	39.76	44.75		50.52	2 / 7			
reaction time	0.136	interval		3.84	4.04	3.99	4.05		4.22	4.33	4.50	4.73	4.99	5.77			11.87	12.60	14.22
		velocity	7.43	9.11	8.66	8.77	8.64		8.29	8.08	7.78	7.40	7.01	6.93	7.92		8.85	8.33	7.38
H1 lead leg	L	strides	22	14	14	14	14		14	15	16	16	16	18.5	173.5				
Duma, Christian (GER) (198		time	5.91	9.73	13.65	17.65	21.83		26.18	30.69	35.33	40.06	44.99		50.57	5 / 8			
reaction time	0.148	interval		3.82	3.92	4.00	4.18		4.35	4.51	4.64	4.73	4.93	5.58			11.74	13.04	14.30
		velocity	7.61	9.16	8.93	8.75	8.37		8.05	7.76	7.54	7.40	7.10	7.17	7.91		8.94	8.05	7.34
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	15	16	19.5	172.5				
Boino, Mowen (PNG) (1979)		time	6.14	10.18	14.34	18.47	22.65		27.01	31.43	36.00	40.70	45.57		51.66	9 / 9			
reaction time	0.058	interval		4.04	4.16	4.13	4.18		4.36	4.42	4.57	4.70	4.87	6.09			12.33	12.96	14.14
		velocity	7.33	8.66	8.41	8.47	8.37		8.03	7.92	7.66	7.45	7.19	6.57	7.74		8.52	8.10	7.43
H1 lead leg	R	strides	21	15	15	15	15		15	15	15	15	15	18	174				

2002 European Championships (Munich, GER)

FINAL date 09-Aug-02

Graubner (2009) - http://www.fgs.uni-halle.de

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (1!		time	5.95	9.65	13.35	17.13	21.03		25.11	29.41	33.62	38.01	42.50		47.58	/ 1			
reaction time	0.141	interval		3.70	3.70	3.78	3.90		4.08	4.30	4.21	4.39	4.49	5.08			11.18	12.28	13.09
		velocity	7.56	9.46	9.46	9.26	8.97		8.58	8.14	8.31	7.97	7.80	7.87	8.41		9.39	8.55	8.02
H1 lead leg		strides		13	13	13	13		13	14	14	15	15						
Mužík, Jiri (CZE) (1976)		time	6.08	9.90	13.80	17.75	21.76		25.80	29.90	34.18	38.60	43.12		48.43	/ 2			
reaction time	0.160	interval		3.82	3.90	3.95	4.01		4.04	4.10	4.28	4.42	4.52	5.31			11.67	12.15	13.22
		velocity	7.40	9.16	8.97	8.86	8.73		8.66	8.54	8.18	7.92	7.74	7.53	8.26		9.00	8.64	7.94
H1 lead leg		strides		14	14	14	14		14	14	14	15	15						
Januszewski, Paweł (POL) (1!		time	6.10	9.93	13.69	17.49	21.37		25.45	29.61	33.98	38.46	43.12		48.46	/ 3			
reaction time	0.145	interval		3.83	3.76	3.80	3.88		4.08	4.16	4.37	4.48	4.66	5.34			11.39	12.12	13.51
		velocity	7.38	9.14	9.31	9.21	9.02		8.58	8.41	8.01	7.81	7.51	7.49	8.25		9.22	8.66	7.77
H1 lead leg		strides		14	14	14	14		14	14	14	15	15						
Mori, Fabrizio (ITA) (1969)		time	6.24	10.16	14.14	18.20	22.22		26.36	30.64	35.02	39.42	43.88		49.05	/ 4			
reaction time	0.133	interval		3.92	3.98	4.06	4.02		4.14	4.28	4.38	4.40	4.46	5.17			11.96	12.44	13.24
		velocity	7.21	8.93	8.79	8.62	8.71		8.45	8.18	7.99	7.95	7.85	7.74	8.15		8.78	8.44	7.93
H1 lead leg		strides																	
Iakovákis, Periklís (GRE) (197		time	6.11	9.91	13.75	17.69	21.67		25.75	30.05	34.42	39.02	43.78		49.07	/ 5			
reaction time	0.163	interval		3.80	3.84	3.94	3.98		4.08	4.30	4.37	4.60	4.76	5.29			11.58	12.36	13.73
		velocity	7.36	9.21	9.11	8.88	8.79		8.58	8.14	8.01	7.61	7.35	7.56	8.15		9.07	8.50	7.65
H1 lead leg		strides																	
Tesarik, Štépán (CZE) (1978)		time	6.20	10.02	13.84	17.74	21.70		25.80	30.08	34.58	39.14	43.87		49.41	/ 6			
reaction time	0.175	interval		3.82	3.82	3.90	3.96		4.10	4.28	4.50	4.56	4.73	5.54			11.54	12.34	13.79

		velocity	7.26	9.16	9.16	8.97	8.84	8.54	8.18	7.78	7.68	7.40	7.22	8.10		9.10	8.51	7.61
H1 lead leg		strides																
Mashchenko, Ruslan (RUS)		time	6.11	9.92	13.73	17.61	21.96	25.75	30.15	34.62	39.34	44.16		50.02	/ 7			
reaction time	0.184	interval		3.81	3.81	3.88	4.35	3.79	4.40	4.47	4.72	4.82	5.86			11.50	12.54	14.01
		velocity	7.36	9.19	9.19	9.02	8.05	9.23	7.95	7.83	7.42	7.26	6.83	8.00		9.13	8.37	7.49
H1 lead leg		strides																
Rawlison, Chris (GBR) (1972		time	6.30	10.24	14.28									dnf	/ --			
reaction time	0.160	interval		3.94	4.04													
		velocity	7.14	8.88	8.66													
H1 lead leg		strides																

Semi-Final 2

date 08-Aug-02 — *Graubner (2009) - http://www.fgs.uni-halle.de*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (1	time	5.97	9.66	13.44	17.26	21.20		25.32	29.69	34.14	38.82	43.53		49.01	/ 1			
reaction time	interval		3.69	3.78	3.82	3.94		4.12	4.37	4.45	4.68	4.71	5.48			11.29	12.43	13.84
	velocity	7.54	9.49	9.26	9.16	8.88		8.50	8.01	7.87	7.48	7.43	7.30	8.16		9.30	8.45	7.59
H1 lead leg	strides																	

Semi-Final 1

date 08-Aug-02 — *Graubner (2009) - http://www.fgs.uni-halle.de*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mužík, Jiri (CZE) (1976)	time	6.15	10.01	13.87	17.81	21.83		25.94	30.08	34.31	38.71	43.25		48.46	/ 1			
reaction time	interval		3.86	3.86	3.94	4.02		4.11	4.14	4.23	4.40	4.54	5.21			11.66	12.27	13.17
	velocity	7.32	9.07	9.07	8.88	8.71		8.52	8.45	8.27	7.95	7.71	7.68	8.25		9.01	8.56	7.97
H1 lead leg	strides																	
Januszewski, Paweł (POL) (19	time	6.04	9.93	13.73	17.59	21.55		25.67	29.83	34.15	38.65	43.23		48.60	/ 2			
reaction time	interval		3.89	3.80	3.86	3.96		4.12	4.16	4.32	4.50	4.58	5.37			11.55	12.24	13.40
	velocity	7.45	9.00	9.21	9.07	8.84		8.50	8.41	8.10	7.78	7.64	7.45	8.23		9.09	8.58	7.84
H1 lead leg	strides																	
Mori, Fabrizio (ITA) (1969)	time	6.17	9.99	13.82	17.66	21.65		25.77	30.16	34.37	38.83	43.43		48.70	/ 3			
reaction time	interval		3.82	3.83	3.84	3.99		4.12	4.39	4.21	4.46	4.60	5.27			11.49	12.50	13.27
	velocity	7.29	9.16	9.14	9.11	8.77		8.50	7.97	8.31	7.85	7.61	7.59	8.21		9.14	8.40	7.91
H1 lead leg	strides																	
Iakovákis, Periklís (GRE) (197	time	6.15	9.99	13.87	17.82	21.83		25.95	30.15	34.53	39.05	43.71		48.99	/ 4			
reaction time	interval		3.84	3.88	3.95	4.01		4.12	4.20	4.38	4.52	4.66	5.28			11.67	12.33	13.56
	velocity	7.32	9.11	9.02	8.86	8.73		8.50	8.33	7.99	7.74	7.51	7.58	8.16		9.00	8.52	7.74
H1 lead leg	strides																	

Heat 4

date 07-Aug-02 — *Graubner (2009) - http://www.fgs.uni-halle.de*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mashchenko, Ruslan (RUS)	time	6.08	9.90	13.74	17.64	21.67		25.80	30.18	34.66	39.30	44.03		49.62	/ 1			
reaction time	interval		3.82	3.84	3.90	4.03		4.13	4.38	4.48	4.64	4.73	5.59			11.56	12.54	13.85
	velocity	7.40	9.16	9.11	8.97	8.68		8.47	7.99	7.81	7.54	7.40	7.16	8.06		9.08	8.37	7.58
H1 lead leg	strides																	
Rawlison, Chris (GBR) (1972	time	6.02	9.72	13.44	17.32	21.34		25.50	29.82	34.56	39.30	44.10		49.73	/ 2			
reaction time	interval		3.70	3.72	3.88	4.02		4.16	4.32	4.74	4.74	4.80	5.63			11.30	12.50	14.28
	velocity	7.48	9.46	9.41	9.02	8.71		8.41	8.10	7.38	7.38	7.29	7.10	8.04		9.29	8.40	7.35
H1 lead leg	strides																	

Heat 3

date 07-Aug-02 — *Graubner (2009) - http://www.fgs.uni-halle.de*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (1	time	6.06	9.86	13.71	17.60	21.50		25.75	30.24	34.88	39.15	44.35		49.52	/ 1			
reaction time	interval		3.80	3.85	3.89	3.90		4.25	4.49	4.64	4.27	5.20	5.17			11.54	12.64	14.11
	velocity	7.43	9.21	9.09	9.00	8.97		8.24	7.80	7.54	8.20	6.73	7.74	8.08		9.10	8.31	7.44
H1 lead leg	strides																	
Monteiro, Edivaldo (POR) (1	time	6.20	10.17	14.07	17.96	22.05		26.31	30.64	36.24	39.81	44.44		49.64	/ 2			
reaction time	interval		3.97	3.90	3.89	4.09		4.26	4.33	5.60	3.57	4.63	5.20			11.76	12.68	13.80
	velocity	7.26	8.82	8.97	9.00	8.56		8.22	8.08	6.25	9.80	7.56	7.69	8.06		8.93	8.28	7.61
H1 lead leg	strides																	
Duma, Christian (GER) (198	time	6.03	9.97	13.90	17.86	21.98		26.21	30.64	36.34	40.16	45.02		50.50	/ 6			
reaction time	interval		3.94	3.93	3.96	4.12		4.23	4.43	5.70	3.82	4.86	5.48			11.83	12.78	14.38
	velocity	7.46	8.88	8.91	8.84	8.50		8.27	7.90	6.14	9.16	7.20	7.30	7.92		8.88	8.22	7.30
H1 lead leg	strides																	

Heat 2

date 07-Aug-02 — *Graubner (2009) - http://www.fgs.uni-halle.de*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mužík, Jiri (CZE) (1976)	time	6.24	10.23	14.29	18.37	22.52		26.69	30.95	35.31	39.85	44.47		49.76	/ 1			
reaction time	0.169 interval		3.99	4.06	4.08	4.15		4.17	4.26	4.36	4.54	4.62	5.29			12.13	12.58	13.52
	velocity	7.21	8.77	8.62	8.58	8.43		8.39	8.22	8.03	7.71	7.58	7.56	8.04		8.66	8.35	7.77
H1 lead leg	strides																	
Borsumato, Anthony (GBR)	time	6.09	9.87	13.73	17.69	21.69		25.81	30.13	34.65	39.46	44.32		49.93	/ 2			

reaction time	interval		3.78	3.86	3.96	4.00	4.12	4.32	4.52	4.81	4.86	5.61			11.60	12.44	14.19
	velocity	7.39	9.26	9.07	8.84	8.75	8.50	8.10	7.74	7.28	7.20	7.13	8.01		9.05	8.44	7.40
H1 lead leg	strides																
Hackelbusch, Henning (GER	time	6.21	10.13	14.09	18.10	22.23	26.67	31.23	35.97	40.80	45.71		51.37	/ 7			
reaction time	interval		3.92	3.96	4.01	4.13	4.44	4.56	4.74	4.83	4.91	5.66			11.89	13.13	14.48
	velocity	7.25	8.93	8.84	8.73	8.47	7.88	7.68	7.38	7.25	7.13	7.07	7.79		8.83	8.00	7.25
H1 lead leg	strides																

Heat 1

date 07-Aug-02

Graubner (2009) - http://www.fgs.uni-halle.de

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Januszewski, Paweł (POL) (19	time	6.09	10.06	13.97	17.85	21.89		26.03	30.31	34.71	39.32	43.87		49.17	/ 1			
reaction time	interval		3.97	3.91	3.88	4.04		4.14	4.28	4.40	4.61	4.55	5.30			11.76	12.46	13.56
	velocity	7.39	8.82	8.95	9.02	8.66		8.45	8.18	7.95	7.59	7.69	7.55	8.14		8.93	8.43	7.74
H1 lead leg	strides																	
Mori, Fabrizio (ITA) (1969)	time	6.37	10.33	14.29	18.25	22.28		26.41	30.85	35.82	39.49	43.99		49.20	/ 2			
reaction time	interval		3.96	3.96	3.96	4.03		4.13	4.44	4.97	3.67	4.50	5.21			11.88	12.60	13.14
	velocity	7.06	8.84	8.84	8.84	8.68		8.47	7.88	7.04	9.54	7.78	7.68	8.13		8.84	8.33	7.99
H1 lead leg	strides																	
Iakovákis, Periklís (GRE) (197	time			13.85	17.89	21.97		26.19	30.77	34.88	39.43	44.07		49.24	/ 3			
reaction time	interval				4.04	4.08		4.22	4.58	4.11	4.55	4.64	5.17				12.88	13.30
	velocity			8.30	8.66	8.58		8.29	7.64	8.52	7.69	7.54	7.74	8.12			8.15	7.89
H1 lead leg	strides																	

2001 Chinese National Games (Guangzhou, CHN)

FINAL

date 22-Nov-01

Gong (2003) - discussion on technique of gold and silver medallist of men's 400m hurdles of the 9th National Games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tan Chunhua (CHN) (1977)	time	6.08	10.05	14.10	18.16	22.27		26.52	30.89	35.36	39.86	44.50		49.85	/ 1			
reaction time	interval		3.97	4.05	4.06	4.11		4.25	4.37	4.47	4.50	4.64	5.35			12.08	12.73	13.61
	velocity	7.40	8.82	8.64	8.62	8.52		8.24	8.01	7.83	7.78	7.54	7.48	8.02		8.69	8.25	7.71
H1 lead leg	strides		14	14	14	14		14	14	14	15	15	19	147				
Zhang Shibao (CHN) (1984)	time	6.09	9.93	13.77	17.77	21.97		26.25	30.65	35.07	39.69	44.57		50.33	/ 2			
reaction time	interval		3.84	3.84	4.00	4.20		4.28	4.40	4.42	4.62	4.88	5.76	NYR		11.68	12.88	13.92
	velocity	7.39	9.11	9.11	8.75	8.33		8.18	7.95	7.92	7.58	7.17	6.94	7.95		8.99	8.15	7.54
H1 lead leg	strides		13	13	15	15		15	15	15	15	15	18.5	149.5				

2001 IAAF World Championships (Edmonton, CAN)

Kota (2016) - 69th high school championships: JAF scientific committee - biomechanics data collection

FINAL

date 10-Aug-01

Behm (2001) - Edmonton: Le quatrache: les finales

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Sánchez, Felix (DOM) (1977)		time	5.7	9.3	13.1	16.9	20.8		24.8	29.1	33.5	37.9	42.3		47.49	5 / 1			*Behm (2001)*
reaction time	0.158	interval		3.6	3.8	3.8	3.9		4.0	4.3	4.4	4.4	4.4	5.19			11.20	12.20	13.20
		velocity	7.89	9.72	9.21	9.21	8.97		8.75	8.14	7.95	7.95	7.95	7.71	8.42		9.38	8.61	7.95
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Mori, Fabrizio (ITA) (1969)		time	5.9	9.7	13.5	17.3	21.2		25.2	29.3	33.6	36.9	42.3		47.54	4 / 2			*Behm (2001)*
reaction time	0.158	interval		3.8	3.8	3.8	3.9		4.0	4.1	4.3	3.3	5.4	5.24	NR / PB		11.40	12.00	13.00
		velocity	7.63	9.21	9.21	9.21	8.97		8.75	8.54	8.14	10.61	6.48	7.63	8.41		9.21	8.75	8.08
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	19	170				
Tamesue, Dai (JPN) (1978)		time	5.85	9.50	13.22	17.04	20.94		24.94	29.09	33.42	37.89	42.56		47.89	3 / 3			*Kota (2016)*
reaction time	0.222	interval		3.65	3.72	3.82	3.90		4.00	4.15	4.33	4.47	4.67	5.33	NR / PB		11.19	12.05	13.47
		velocity	7.69	9.59	9.41	9.16	8.97		8.75	8.43	8.08	7.83	7.49	7.50	8.35		9.38	8.71	7.80
H1 lead leg	L	strides	20	13	13	13	13		14	14	15	15	15	18.5	163.5				
Al-Somaily, Hadi Sou'an (KS		time	5.8	9.4	13.1	16.9	20.9		24.9	28.9	33.1	37.7	42.4		47.99	1 / 4			*Behm (2001)*
reaction time	0.164	interval		3.6	3.7	3.8	4.0		4.0	4.0	4.2	4.6	4.7	5.59			11.10	12.00	13.50
		velocity	7.76	9.72	9.46	9.21	8.75		8.75	8.75	8.33	7.61	7.45	7.16	8.34		9.46	8.75	7.78
H1 lead leg	L	strides	21	13	13	13	13		13	13	13	13	14	17.5	156.5				
Gorban, Boris (RUS) (1978)		time	5.9	9.8	13.7	17.7	21.6		25.5	29.5	33.8	38.3	42.9		48.40	2 / ~~5~~			*Behm (2001)*
reaction time	0.176	interval		3.9	3.9	4.0	3.9		3.9	4.0	4.3	4.5	4.6	5.50	DQ		11.80	11.80	13.40
		velocity	7.63	8.97	8.97	8.75	8.97		8.97	8.75	8.14	7.78	7.61	7.27	8.26		8.90	8.90	7.84
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	14	14	17.5	156.5				
Rawlinson, Christopher (GB		time	5.8	9.6	13.3	17.1	21.0		25.0	29.2	33.6	38.1	42.7		48.54	6 / ~~6~~ 5			*Behm (2001)*
reaction time	0.164	interval		3.8	3.7	3.8	3.9		4.0	4.2	4.4	4.5	4.6	5.84			11.30	12.10	13.50
		velocity	7.76	9.21	9.46	9.21	8.97		8.75	8.33	7.95	7.78	7.61	6.85	8.24		9.29	8.68	7.78
H1 lead leg	R	strides	20	14	14	14	14		14	14	15	15	15		149				
Januszewski, Paweł (POL) (19		time	5.9	9.8	13.5	17.5	21.4		25.5	29.8	34.1	38.7	43.3		48.57	7 / ~~7~~ 6			*Behm (2001)*
reaction time	0.175	interval		3.9	3.7	4.0	3.9		4.1	4.3	4.3	4.6	4.6	5.27			11.60	12.30	13.50
		velocity	7.63	8.97	9.46	8.75	8.97		8.54	8.14	8.14	7.61	7.61	7.59	8.24		9.05	8.54	7.78
H1 lead leg	L	strides	21	14	14	14	14		15	15	15	15	15		152				
Mužík, Jirí (CZE) (1976)		time	5.9	9.8	13.4	17.3	21.3		25.3	29.5	34.0	38.5	43.2		49.07	8 / ~~8~~ 7			*Behm (2001)*
reaction time	0.203	interval		3.9	3.6	3.9	4.0		4.0	4.2	4.5	4.5	4.7	5.87			11.40	12.20	13.70

		velocity	7.63	8.97	9.72	8.97	8.75	8.75	8.33	7.78	7.78	7.45	6.81	8.15		9.21	8.61	7.66
H1 lead leg	R	strides	21	13	13	13	13	14	14	15	15	15		146				

2001 European Cup (Bremen, GER)

FINAL date 23-Jun-01

Graubner (2007) - http://www.fgs.uni-halle.de

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mori, Fabrizio (ITA) (1969)	time	6.13	9.95	13.76	17.72	21.71		25.70	30.00	34.34	38.80	43.30		49.39	/ 1			
reaction time	interval		3.82	3.81	3.96	3.99		3.99	4.30	4.34	4.46	4.50	6.09			11.59	12.28	13.30
	velocity	7.34	9.16	9.19	8.84	8.77		8.77	8.14	8.06	7.85	7.78	6.57	8.10		9.06	8.55	7.89
H1 lead leg	strides																	
Plawgo, Marek (POL) (1981)	time	5.94	9.68	13.54	17.50	21.52		25.60	29.46	34.48	39.10	43.86		48.98	/ 2			
reaction time	interval		3.74	3.86	3.96	4.02		4.08	3.86	5.02	4.62	4.76	5.12			11.56	11.96	14.40
	velocity	7.58	9.36	9.07	8.84	8.71		8.58	9.07	6.97	7.58	7.35	7.81	8.17		9.08	8.78	7.29
H1 lead leg	strides																	
Diagana, Stéphane (FRA) (1	time	6.03	9.78	13.62	17.52	21.41		25.46	29.60	34.16	38.90	43.73		49.07	/ 3			
reaction time	interval		3.75	3.84	3.90	3.89		4.05	4.14	4.56	4.74	4.83	5.34			11.49	12.08	14.13
	velocity	7.46	9.33	9.11	8.97	9.00		8.64	8.45	7.68	7.38	7.25	7.49	8.15		9.14	8.69	7.43
H1 lead leg	strides																	
Mashchenko, Ruslan (RUS)	time	6.08	9.90	13.76	17.62	21.62		25.70	30.04	34.46	39.14	43.92		49.53	/ 4			
reaction time	interval		3.82	3.86	3.86	4.00		4.08	4.34	4.42	4.68	4.78	5.61			11.54	12.42	13.88
	velocity	7.40	9.16	9.07	9.07	8.75		8.58	8.06	7.92	7.48	7.32	7.13	8.08		9.10	8.45	7.56
H1 lead leg	strides																	
Rawlinson, Christopher (GB	time	6.09	9.81	13.56	17.48	21.46		25.63	30.02	34.58	39.48	44.55		50.11	/ 5			
reaction time	interval		3.72	3.75	3.92	3.98		4.17	4.39	4.56	4.90	5.07	5.56			11.39	12.54	14.53
	velocity	7.39	9.41	9.33	8.93	8.79		8.39	7.97	7.68	7.14	6.90	7.19	7.98		9.22	8.37	7.23
H1 lead leg	strides																	
Iakovákis, Periklís (GRE) (197	time	6.30	10.18	14.02	18.02	21.96		26.08	30.56	35.26	40.08	44.86		50.28	/ 6			
reaction time	interval		3.88	3.84	4.00	3.94		4.12	4.48	4.70	4.82	4.78	5.42			11.72	12.54	14.30
	velocity	7.14	9.02	9.11	8.75	8.88		8.50	7.81	7.45	7.26	7.32	7.38	7.96		8.96	8.37	7.34
H1 lead leg	strides																	
Rodríguez, Eduardo Iván (ES	time	6.26	10.22	14.17	18.16	22.22		26.40	30.78	35.40	40.06	44.89		50.44	/ 7			
reaction time	interval		3.96	3.95	3.99	4.06		4.18	4.38	4.62	4.66	4.83	5.55			11.90	12.62	14.11
	velocity	7.19	8.84	8.86	8.77	8.62		8.37	7.99	7.58	7.51	7.25	7.21	7.93		8.82	8.32	7.44
H1 lead leg	strides																	
Reinberg, Jan (GER) (1980)	time	6.30	10.21	14.19	18.32	22.48		26.84	31.32	35.98	40.96	45.85		51.66	/ 8			
reaction time	interval		3.91	3.98	4.13	4.16		4.36	4.48	4.66	4.98	4.89	5.81			12.02	13.00	14.53
	velocity	7.14	8.95	8.79	8.47	8.41		8.03	7.81	7.51	7.03	7.16	6.88	7.74		8.74	8.08	7.23
H1 lead leg	strides																	

2000 Olympic Games (Sydney, AUS)

FINAL date 27-Sep-00

Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Taylor, Angelo (USA) (1978)	time	5.90	9.62	13.38	17.22	21.14	22.66	25.10	29.22	33.58	38.02	42.46		47.50	1 / 1			
reaction time 0.179	interval		3.72	3.76	3.84	3.92		3.96	4.12	4.36	4.44	4.44	5.04	PB		11.32	12.00	13.24
	velocity	7.63	9.41	9.31	9.11	8.93	8.83	8.84	8.50	8.03	7.88	7.88	7.94	8.42		9.28	8.75	7.93
H1 lead leg	strides	21	13	13	13	13		13	13	14	14	14	17.1	158.1				
Al-Somaily, Hadi Sou'an (KS	time	5.94	9.66	13.42	17.26	21.14	22.62	25.14	29.18	33.38	37.82	42.34		47.53	4 / 2			
reaction time 0.437	interval		3.72	3.76	3.84	3.88		4.00	4.04	4.20	4.44	4.52	5.19	AR		11.32	11.92	13.16
	velocity	7.58	9.41	9.31	9.11	9.02	8.84	8.75	8.66	8.33	7.88	7.74	7.71	8.42		9.28	8.81	7.98
H1 lead leg	strides	22	13	13	13	13		13	13	13	13	14	17	157				
Herbert, Llewellyn (RSA) (19	time	5.98	9.78	13.62	17.50	21.46	22.98	25.50	29.54	33.70	38.06	42.54		47.81	6 / 3			
reaction time 0.169	interval		3.80	3.84	3.88	3.96		4.04	4.04	4.16	4.36	4.48	5.27	NR		11.52	12.04	13.00
	velocity	7.53	9.21	9.11	9.02	8.84	8.70	8.66	8.66	8.41	8.03	7.81	7.59	8.37		9.11	8.72	8.08
H1 lead leg	strides	22	14	14	14	14		14	14	15	15	15	18.2	169.2				
Carter, James (USA) (1978)	time	5.78	9.50	13.26	17.10	21.06	22.58	25.14	29.26	33.62	38.02	42.62		48.04	5 / 4			
reaction time 0.421	interval		3.72	3.76	3.84	3.96		4.08	4.12	4.36	4.40	4.60	5.42	PB		11.32	12.16	13.36
	velocity	7.79	9.41	9.31	9.11	8.84	8.86	8.58	8.50	8.03	7.95	7.61	7.38	8.33		9.28	8.63	7.86
H1 lead leg	strides	21	13	13	13	13		13	14	14	14	14	17	159				
de Araújo, Eronildo (BRA) (	time	5.98	9.66	13.38	17.14	21.06	22.62	25.10	29.38	33.78	38.26	43.94		48.34	8 / 5			
reaction time 0.190	interval		3.68	3.72	3.76	3.92		4.04	4.28	4.40	4.48	5.68	4.40			11.16	12.24	14.56
	velocity	7.53	9.51	9.41	9.31	8.93	8.84	8.66	8.18	7.95	7.81	6.16	9.09	8.27		9.41	8.58	7.21
H1 lead leg	strides	21	13	13	13	13		13	14	14	14	14	17.3	159.3				
Januszewski, Paweł (POL) (19	time	5.98	9.86	13.66	17.50	21.46	22.94	25.62	29.82	34.10	38.66	43.18		48.44	2 / 6			
reaction time 0.149	interval		3.88	3.80	3.84	3.96		4.16	4.20	4.28	4.56	4.52	5.26			11.52	12.32	13.36
	velocity	7.53	9.02	9.21	9.11	8.84	8.72	8.41	8.33	8.18	7.68	7.74	7.60	8.26		9.11	8.52	7.86
H1 lead leg	strides	22	14	14	14	14		14	14	15	15	15	18.1	169.1				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Mori, Fabrizio (ITA) (1969)		time	6.10	9.94	13.66	17.46	21.46	22.90	25.54	29.70	34.06	38.54	43.22		48.78	3 / 7		
reaction time	0.198	interval		3.84	3.72	3.80	4.00		4.08	4.16	4.36	4.48	4.68	5.56			11.36	12.24	13.52
		velocity	7.38	9.11	9.41	9.21	8.75	8.73	8.58	8.41	8.03	7.81	7.48	7.19	8.20		9.24	8.58	7.77
H1 lead leg		strides	22	14	14	14	14		14	14	15	15	15	18.5	169.5				
Horbenko, Hennadiy (UKR)		time	6.26	10.02	13.90	17.70	21.70	23.18	25.70	29.90	34.34	38.90	43.58		49.01	7 / 8		
reaction time	0.395	interval		3.76	3.88	3.80	4.00		4.00	4.20	4.44	4.56	4.68	5.43			11.44	12.20	13.68
		velocity	7.19	9.31	9.02	9.21	8.75	8.63	8.75	8.33	7.88	7.68	7.48	7.37	8.16		9.18	8.61	7.68
H1 lead leg		strides	20	13	13	13	13		13	13	14	14	14		140				

Semi-Final 3

date 25-Sep-00

Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Carter, James (USA) (1978)		time	5.70	9.46	13.14	16.90	20.86	22.38	24.90	29.14	33.54	38.10	42.96		48.48	3 / 1			
reaction time	0.202	interval		3.76	3.68	3.76	3.96		4.04	4.24	4.40	4.56	4.86	5.52			11.20	12.24	13.82
		velocity	7.89	9.31	9.51	9.31	8.84	8.94	8.66	8.25	7.95	7.68	7.20	7.25	8.25		9.38	8.58	7.60
H1 lead leg		strides	21	13	13	13	13		13	14	14	14	15	18	161				
de Araújo, Eronildo (BRA) (		time	5.94	9.62	13.34	17.18	21.18	22.70	25.26	29.46	33.98	38.58	43.34		48.76	4 / 2			
reaction time	0.181	interval		3.68	3.72	3.84	4.00		4.08	4.20	4.52	4.60	4.76	5.42			11.24	12.28	13.88
		velocity	7.58	9.51	9.41	9.11	8.75	8.81	8.58	8.33	7.74	7.61	7.35	7.38	8.20		9.34	8.55	7.56
H1 lead leg		strides	21	13	13	13	13		13	14	14	14	14	17.8	159.8				
Matete, Samuel (ZAM) (1968)		time	6.06	9.82	13.70	17.66	21.66	23.18	25.74	29.98	34.38	38.90	43.50		48.98	6 / 3			
reaction time	0.228	interval		3.76	3.88	3.96	4.00		4.08	4.24	4.40	4.52	4.60	5.48			11.60	12.32	13.52
		velocity	7.43	9.31	9.02	8.84	8.75	8.63	8.58	8.25	7.95	7.74	7.61	7.30	8.17		9.05	8.52	7.77
H1 lead leg		strides	21	13	13	13	13		13	13	13	15	15	18	160				
Myburgh, Alwyn (RSA) (198		time	5.78	9.50	13.34	17.26	21.22	22.74	25.26	29.50	34.06	38.74	43.58		49.25	1 / 4			
reaction time	0.202	interval		3.72	3.84	3.92	3.96		4.04	4.24	4.56	4.68	4.84	5.67			11.48	12.24	14.08
		velocity	7.79	9.41	9.11	8.93	8.84	8.80	8.66	8.25	7.68	7.48	7.23	7.05	8.12		9.15	8.58	7.46
H1 lead leg		strides	22	14	14	14	14		14	14	15	15	15	19	170				
Gorban, Boris (RUS) (1978)		time	5.94	9.74	13.66	17.62	21.66	23.18	25.74	30.02	34.54	39.14	43.86		49.29	5 / 5			
reaction time	0.454	interval		3.80	3.92	3.96	4.04		4.08	4.28	4.52	4.60	4.72	5.43			11.68	12.40	13.84
		velocity	7.58	9.21	8.93	8.84	8.66	8.63	8.58	8.18	7.74	7.61	7.42	7.37	8.12		8.99	8.47	7.59
H1 lead leg		strides	20	13	13	13	13		13	14	14	14	14	17.5	158.5				
Douglas, Matt (GBR) (1976)		time	5.86	9.50	13.22	16.98	20.90	22.50	24.98	29.34	33.86	38.62	43.20		49.53	8 / 6			
reaction time	0.177	interval		3.64	3.72	3.76	3.92		4.08	4.36	4.52	4.76	4.58	6.33			11.12	12.36	13.86
		velocity	7.68	9.62	9.41	9.31	8.93	8.89	8.58	8.03	7.74	7.35	7.64	6.32	8.08		9.44	8.50	7.58
H1 lead leg		strides	21	13	13	13	13		14	14	15	15	15	19.5	165.5				
Morgan, Dinsdale (JAM) (19		time	5.86	9.54	13.34	17.30	21.42	23.02	25.70	30.02	34.70	39.46	44.42		50.23	2 / 7			
reaction time	0.166	interval		3.68	3.80	3.96	4.12		4.28	4.32	4.68	4.76	4.96	5.81			11.44	12.72	14.40
		velocity	7.68	9.51	9.21	8.84	8.50	8.69	8.18	8.10	7.48	7.35	7.06	6.88	7.96		9.18	8.25	7.29
H1 lead leg		strides	22	14	14	14	14		14	15	15	15	16	19	172				
Keter, Erick (KEN) (1966)		time	6.14	9.90	13.70	17.70	21.98		26.26	30.74	35.34				51.25	7 / 8			
reaction time	0.202	interval		3.76	3.80	4.00	4.28		4.28	4.48	4.60						11.56	13.04	
		velocity	7.33	9.31	9.21	8.75	8.18		8.18	7.81	7.61				7.80		9.08	8.05	
H1 lead leg		strides	21	13	13	15	15		15	15	15				122				

Semi-Final 2

date 25-Sep-00

Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Herbert, Llewellyn (RSA) (19		time	5.96	9.80	13.80	17.72	21.72	23.38	25.80	29.96	34.16	38.56	43.12		48.38	4 / 1			
reaction time	0.153	interval		3.84	4.00	3.92	4.00		4.08	4.16	4.20	4.40	4.56	5.26			11.76	12.24	13.16
		velocity	7.55	9.11	8.75	8.93	8.75	8.55	8.58	8.41	8.33	7.95	7.68	7.60	8.27		8.93	8.58	7.98
H1 lead leg		strides		13	13	13	14		14	14	15	15	15	18.2	144.2				
Taylor, Angelo (USA) (1978)		time	5.84	9.60	13.48	17.36	21.28	22.80	25.32	29.60	34.04	38.52	43.12		48.49	3 / 2			
reaction time	0.250	interval		3.76	3.88	3.88	3.92		4.04	4.28	4.44	4.48	4.60	5.37			11.52	12.24	13.52
		velocity	7.71	9.31	9.02	9.02	8.93	8.77	8.66	8.18	7.88	7.81	7.61	7.45	8.25		9.11	8.58	7.77
H1 lead leg		strides		13	13	13	13		13	14	14	14	14	17.4	138.4				
Mashchenko, Ruslan (RUS)		time	5.88	9.72	13.44	17.24	21.12	22.64	25.16	29.40	33.80	38.40	43.16		48.94	7 / 3			
reaction time	0.177	interval		3.84	3.72	3.80	3.88		4.04	4.24	4.40	4.60	4.76	5.78			11.36	12.16	13.76
		velocity	7.65	9.11	9.41	9.21	9.02	8.83	8.66	8.25	7.95	7.61	7.35	6.92	8.17		9.24	8.63	7.63
H1 lead leg		strides		13	13	13	13		13	14	14	15	15	18.6	141.6				
Young, Blair (AUS) (1971)		time	6.12	9.96	13.84	17.68	21.60	23.24	25.84	30.16	34.60	39.24			49.20	8 / 4			
reaction time	0.255	interval		3.84	3.88	3.84	3.92		4.24	4.32	4.44	4.64					11.56	12.48	
		velocity	7.35	9.11	9.02	9.11	8.93	8.61	8.25	8.10	7.88	7.54			8.13		9.08	8.41	
H1 lead leg		strides		13	13	13	13		14	14	15	15			110				
Mužík, Jiri (CZE) (1976)		time	5.96	9.88	13.72	17.64	21.76	23.36	25.96	30.24	34.68	39.20	43.92		49.23	5 / 5			
reaction time	0.227	interval		3.92	3.84	3.92	4.12		4.20	4.28	4.44	4.52	4.72	5.31			11.68	12.60	13.68
		velocity	7.55	8.93	9.11	8.93	8.50	8.56	8.33	8.18	7.88	7.74	7.42	7.53	8.13		8.99	8.33	7.68
H1 lead leg		strides		13	13	13	14		14	14	15	15	15	19.2	145.2				

Rawlinson, Christopher (GB	time	6.00	9.76	13.56	17.40	21.36	22.88	25.48	29.80	34.24	38.92	43.76		49.25	6 / 6			
reaction time 0.177	interval		3.76	3.80	3.84	3.96		4.12	4.32	4.44	4.68	4.84	5.49			11.40	12.40	13.96
	velocity	7.50	9.31	9.21	9.11	8.84	8.74	8.50	8.10	7.88	7.48	7.23	7.29	8.12		9.21	8.47	7.52
H1 lead leg	strides		14	14	14	14		14	15	15	15	16	19	150				
Sańchez, Félix (DOM) (1977)	time	6.00	9.68	13.48	17.44	21.52	23.12	25.80	30.20	34.76	39.44	44.16		49.69	1 / 7			
reaction time 0.178	interval		3.68	3.80	3.96	4.08		4.28	4.40	4.56	4.68	4.72	5.53			11.44	12.76	13.96
	velocity	7.50	9.51	9.21	8.84	8.58	8.65	8.18	7.95	7.68	7.48	7.42	7.23	8.05		9.18	8.23	7.52
H1 lead leg	strides		13	13	13	13		13	14	14	15	15		123				
Frinolli, Giorgio (ITA) (1970)	time	6.08	9.88	13.84	17.84	21.92		26.08	30.52	35.04	39.72	44.48		50.10	2 / 8			
reaction time 0.242	interval		3.80	3.96	4.00	4.08		4.16	4.44	4.52	4.68	4.76	5.62			11.76	12.68	13.96
	velocity	7.40	9.21	8.84	8.75	8.58		8.41	7.88	7.74	7.48	7.35	7.12	7.98		8.93	8.28	7.52
H1 lead leg	strides		14	14	14	14		14	15	15	16	15						

Semi-Final 1

date 25-Sep-00

Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Al-Somaily, Hadi Sou'an (KS	time	5.94	9.74	13.58	17.46	21.42	22.94	25.50	29.62	33.94	39.30	42.82		48.14	6 / 1			
reaction time 0.316	interval		3.80	3.84	3.88	3.96		4.08	4.12	4.32	5.36	3.52	5.32	AR		11.52	12.16	13.20
	velocity	7.58	9.21	9.11	9.02	8.84	8.72	8.58	8.50	8.10	6.53	9.94	7.52	8.31		9.11	8.63	7.95
H1 lead leg	strides	21	13	13	13	13		13	13	13	13	14	17	156				
Mori, Fabrizio (ITA) (1969)	time	6.14	10.10	13.90	17.82	21.82	23.42	25.98	30.14	34.50	38.90	43.34		48.40	4 / 2			
reaction time	interval		3.96	3.80	3.92	4.00		4.16	4.16	4.36	4.40	4.44	5.06			11.68	12.32	13.20
	velocity	7.33	8.84	9.21	8.93	8.75	8.54	8.41	8.41	8.03	7.95	7.88	7.91	8.26		8.99	8.52	7.95
H1 lead leg	strides	22	14	14	14	14		14	14	15	15	15	19	170				
Horbenko, Hennadiy (UKR)	time	5.94	9.86	13.70	17.62	21.82	23.10	25.62	29.66	34.10	38.50	43.18		48.40	5 / 3			
reaction time 0.478	interval		3.92	3.84	3.92	4.20		3.80	4.04	4.44	4.40	4.68	5.22	PB		11.68	12.04	13.52
	velocity	7.58	8.93	9.11	8.93	8.33	8.66	9.21	8.66	7.88	7.95	7.48	7.66	8.26		8.99	8.72	7.77
H1 lead leg	strides	21	13	13	13	13		13	13	14	14	14	17.4	158.4				
Januszewski, Paweł (POL) (19	time	6.02	9.86	13.70	17.62	21.58	23.14	25.70	29.94	34.26	38.66	43.22		48.42	7 / 4			
reaction time 0.244	interval		3.84	3.84	3.92	3.96		4.12	4.24	4.32	4.40	4.56	5.20			11.60	12.32	13.28
	velocity	7.48	9.11	9.11	8.93	8.84	8.64	8.50	8.25	8.10	7.95	7.68	7.69	8.26		9.05	8.52	7.91
H1 lead leg	strides	22	14	14	14	14		14	14	15	15	15	18.2	169.2				
Thomas, Eric (USA) (1973)	time	6.02	9.86	13.74	17.62	21.58	23.14	25.66	30.04	34.42	39.02	43.74		49.25	2 / 5			
reaction time 0.188	interval		3.84	3.88	3.88	3.96		4.08	4.38	4.38	4.60	4.72	5.51			11.60	12.42	13.70
	velocity	7.48	9.11	9.02	9.02	8.84	8.64	8.58	7.99	7.99	7.61	7.42	7.26	8.12		9.05	8.45	7.66
H1 lead leg	strides	21	13	13	13	13		13	14	14	15	15	17.8	161.8				
Goller, Thomas (GER) (1977)	time	5.90	9.58	13.50	17.42	21.38	22.90	25.50	29.82	34.30	38.94	43.66		49.28	3 / 6			
reaction time 0.152	interval		3.68	3.92	3.92	3.96		4.12	4.32	4.48	4.64	4.72	5.62			11.52	12.40	13.84
	velocity	7.63	9.51	8.93	8.93	8.84	8.73	8.50	8.10	7.81	7.54	7.42	7.12	8.12		9.11	8.47	7.59
H1 lead leg	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Rodrigues, Pedro (POR) (19	time	6.06	9.98	13.98	17.98	21.98	23.50	26.02	30.38	34.86	39.42	44.10		49.48	1 / 7			
reaction time 0.162	interval		3.92	4.00	4.00	4.00		4.04	4.36	4.48	4.56	4.68	5.38			11.92	12.40	13.72
	velocity	7.43	8.93	8.75	8.75	8.75	8.51	8.66	8.03	7.81	7.68	7.48	7.43	8.08		8.81	8.47	7.65
H1 lead leg	strides	21	13	13	13	13		13	14	14	15	15		144				
Chen Tein-Wen (TAI) (1978)	time	5.98	9.82	13.82	17.82	21.86	23.42	25.98	30.38	34.86	39.46			50.52	8 / 8			
reaction time 0.182	interval		3.84	4.00	4.00	4.04		4.12	4.40	4.48	4.60					11.84	12.56	
	velocity	7.53	9.11	8.75	8.75	8.66	8.54	8.50	7.95	7.81	7.61			7.92		8.87	8.36	
H1 lead leg	strides	22	14	14	14	14		14	14	15	15			136				

Heat 8

date 24-Sep-00

Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
de Araújo, Eronildo (BRA) (	time	6.06	9.86	13.62	17.58	21.62		25.86	30.18	34.82	39.62	44.42		50.06	8 / 1			
reaction time 0.179	interval		3.80	3.76	3.96	4.04		4.24	4.32	4.64	4.80	4.80	5.64			11.52	12.60	14.24
	velocity	7.43	9.21	9.31	8.84	8.66		8.25	8.10	7.54	7.29	7.29	7.09	7.99		9.11	8.33	7.37
H1 lead leg	strides	21	13	13	13	13		14	14	15	15	15	17.9	163.9				
Frinolii, Giorgio (ITA) (1970)	time	6.06	9.82	13.78	17.70	21.78		25.94	30.26	34.86	39.78	44.66		50.27	6 / 2			
reaction time 0.179	interval		3.76	3.96	3.92	4.08		4.16	4.32	4.60	4.92	4.88	5.61			11.64	12.56	14.40
	velocity	7.43	9.31	8.84	8.93	8.58		8.41	8.10	7.61	7.11	7.17	7.13	7.96		9.02	8.36	7.29
H1 lead leg	strides	21	14	14	14	14		14	14	15	16	16	19.2	171.2				
Shiryayev, Vladislav (RUS) (1	time	6.26	10.18	14.10	18.10	22.14		26.26	30.62	35.26	40.06	44.70		50.39	4 / 3			
reaction time 0.179	interval		3.92	3.92	4.00	4.04		4.12	4.36	4.64	4.80	4.64	5.69			11.84	12.52	14.08
	velocity	7.19	8.93	8.93	8.75	8.66		8.50	8.03	7.54	7.29	7.54	7.03	7.94		8.87	8.39	7.46
H1 lead leg	strides	20	13	13	13	13		13	14	14	15	15	18.2	161.2				
Monreal, Íñigo (ESP) (1974)	time	6.18	9.94	13.86	17.90	22.02		26.30	30.74	35.58	40.66	45.90		51.32	5 / 4			
reaction time 0.502	interval		3.76	3.92	4.04	4.12		4.28	4.44	4.84	5.08	5.24	5.42			11.72	12.84	15.16
	velocity	7.28	9.31	8.93	8.66	8.50		8.18	7.88	7.23	6.89	6.68	7.38	7.79		8.96	8.18	6.93
H1 lead leg	strides	20	13	13	13	13		13	14	15	15	15		144				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Pesa, Sinisa (YUG) (1973)	time	6.06	9.82	13.70	17.62	21.74		25.98	30.38	35.18	40.26			52.14	7 / 5			
reaction time 0.165	interval		3.76	3.88	3.92	4.12		4.24	4.40	4.80	5.08					11.56	12.76	
	velocity	7.43	9.31	9.02	8.93	8.50		8.25	7.95	7.29	6.89			7.67		9.08	8.23	
H1 lead leg	strides	20	13	13	13	14		14	14	14	16	16		147				
Young, Curt (PAN) (1974)	time	6.02	9.74	13.54	17.54	21.74		25.98	30.58	35.50	40.78	46.18		52.46	2 / 6			
reaction time 0.164	interval		3.72	3.80	4.00	4.20		4.24	4.60	4.92	5.28	5.40	6.28			11.52	13.04	15.60
	velocity	7.48	9.41	9.21	8.75	8.33		8.25	7.61	7.11	6.63	6.48	6.37	7.62		9.11	8.05	6.73
H1 lead leg	strides	21	13	13	13	13		14	15	15	16	16		149				
Harnden, Iain (ZIM) (1976)	time	6.26	10.10	13.98	17.98	22.18		26.62	31.22	36.26	41.74			54.01	3 / 7			
reaction time 0.287	interval		3.84	3.88	4.00	4.20		4.44	4.60	5.04	5.48					11.72	13.24	
	velocity	7.19	9.11	9.02	8.75	8.33		7.88	7.61	6.94	6.39			7.41		8.96	7.93	
H1 lead leg	strides	21	13	13	13	13		14	14	15	16			132				
Tamesue, Dai (JPN) (1978)	time	5.78	9.38	13.14	16.98	20.98		25.18	29.66	34.30	fell down			61.81	1 / 8			
reaction time 0.256	interval		3.60	3.76	3.84	4.00		4.20	4.48	4.64						11.20	12.68	
	velocity	7.79	9.72	9.31	9.11	8.75		8.33	7.81	7.54				6.47		9.38	8.28	
H1 lead leg	strides		13	13	13	13		14	14	15	17			112				

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Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Matete, Samuel (ZAM) (1968)	time	5.92	9.64	13.52	17.80	21.64		25.80	30.16	34.52	39.04	43.60		48.98	1 / 1			
reaction time 0.184	interval		3.72	3.88	4.28	3.84		4.16	4.36	4.36	4.52	4.56	5.38			11.88	12.36	13.44
	velocity	7.60	9.41	9.02	8.18	9.11		8.41	8.03	8.03	7.74	7.68	7.43	8.17		8.84	8.50	7.81
H1 lead leg	strides	21	13	13	13	13		13	13	15	15	15	17.8	161.8				
Horbenko, Hennadiy (UKR)	time	6.08	9.88	13.80	17.76	21.76		25.84	30.12	34.48	39.00	43.72		49.12	5 / 2			
reaction time 0.406	interval		3.80	3.92	3.96	4.00		4.08	4.28	4.36	4.52	4.72	5.40	PB		11.68	12.36	13.60
	velocity	7.40	9.21	8.93	8.84	8.75		8.58	8.18	8.03	7.74	7.42	7.41	8.14		8.99	8.50	7.72
H1 lead leg	strides	20	13	13	13	13		13	13	14	14	14	17.4	157.4				
Douglas, Matt (GBR) (1976)	time	5.96	9.64	13.56	17.48	21.52		25.80	30.20	34.60	39.28	44.04		49.62	8 / 3			
reaction time 0.163	interval		3.68	3.92	3.92	4.04		4.28	4.40	4.40	4.68	4.76	5.58			11.52	12.72	13.84
	velocity	7.55	9.51	8.93	8.93	8.66		8.18	7.95	7.95	7.48	7.35	7.17	8.06		9.11	8.25	7.59
H1 lead leg	strides	21	13	13	13	13		14	14	15	15	15	18.8	164.8				
Thompson, Kemel (JAM) (19	time	6.08	9.88	13.96	18.04	22.28		26.52	30.98	35.32	39.80	44.52		50.40	7 / 4			
reaction time 0.241	interval		3.80	4.08	4.08	4.24		4.24	4.46	4.34	4.48	4.72	5.88			11.96	12.94	13.54
	velocity	7.40	9.21	8.58	8.58	8.25		8.25	7.85	8.06	7.81	7.42	6.80	7.94		8.78	8.11	7.75
H1 lead leg	strides	22	14	14	14	14		14	14	15	15	16		152				
Hamed, Zaid Abou (SYR) (19	time	6.08	10.08	14.20	18.36	22.76		27.04	31.60	36.04	40.68			50.74	3 / 5			
reaction time 0.117	interval		4.00	4.12	4.16	4.40		4.28	4.56	4.44	4.64					12.28	13.24	
	velocity	7.40	8.75	8.50	8.41	7.95		8.18	7.68	7.88	7.54			7.88		8.55	7.93	
H1 lead leg	strides	21	14	14	14	14		14	15	15	15			136				
Tucker, Paul (GUY) (1976)	time	6.00	9.80	13.76	17.76	21.88		26.04	30.48	35.04	39.92			50.92	6 / 6			
reaction time 0.354	interval		3.80	3.96	4.00	4.12		4.16	4.44	4.56	4.88					11.76	12.72	
	velocity	7.50	9.21	8.84	8.75	8.50		8.41	7.88	7.68	7.17			7.86		8.93	8.25	
H1 lead leg	strides	22	14	14	14	14		14	15	15	16			138				
Holúbek, Radoslav (SVK) (19	time	6.04	10.08	14.16	18.36	22.56		26.88	31.36	35.92	40.68			51.18	2 / 7			
reaction time 0.127	interval		4.04	4.08	4.20	4.20		4.32	4.48	4.56	4.76					12.32	13.00	
	velocity	7.45	8.66	8.58	8.33	8.33		8.10	7.81	7.68	7.35			7.82		8.52	8.08	
H1 lead leg	strides	22	14	14	14	14		14	14	15	15			136				
Boino, Mowen (PNG) (1979)	time	6.16	10.28	14.52	18.76	23.04		27.52	32.08	36.48				51.38	4 / 8			
reaction time 0.406	interval		4.12	4.24	4.24	4.28		4.48	4.56	4.40				NR		12.60	13.32	
	velocity	7.31	8.50	8.25	8.25	8.18		7.81	7.68	7.95				7.79		8.33	7.88	
H1 lead leg	strides	22	15	15	15	15		15	15	15				127				

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Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Al-Somaily, Hadi Sou'an (KS	time	5.98	9.66	13.50	17.38	21.34		25.42	29.78	34.34	38.98	43.70		49.28	1 / 1			
reaction time 0.174	interval		3.68	3.84	3.88	3.96		4.08	4.36	4.56	4.64	4.72	5.58			11.40	12.40	13.92
	velocity	7.53	9.51	9.11	9.02	8.84		8.58	8.03	7.68	7.54	7.42	7.17	8.12		9.21	8.47	7.54
H1 lead leg	strides	21	13	13	13	13		13	13	14	14	14	17.7	158.7				
Carter, James (USA) (1978)	time	5.74	9.50	13.46	17.38	21.46		25.70	30.26	34.78	39.30	43.94		49.41	7 / 2			
reaction time 0.174	interval		3.76	3.96	3.92	4.08		4.24	4.56	4.52	4.52	4.64	5.47			11.64	12.88	13.68
	velocity	7.84	9.31	8.84	8.93	8.58		8.25	7.68	7.74	7.74	7.54	7.31	8.10		9.02	8.15	7.68
H1 lead leg	strides	21	13	13	13	13		13	14	14	14	14	17.9	159.9				
Myburgh, Alwyn (RSA) (198	time	5.98	9.82	13.82	17.82	21.94		26.22	30.50	34.98	39.54	44.14		49.57	6 / 3			
reaction time 0.184	interval		3.84	4.00	4.00	4.12		4.28	4.28	4.48	4.56	4.60	5.43			11.84	12.68	13.64
	velocity	7.53	9.11	8.75	8.75	8.50		8.18	8.18	7.81	7.68	7.61	7.37	8.07		8.87	8.28	7.70
H1 lead leg	strides	21	14	14	14	14		14	14	15	15	15	18.7	168.7				

Rodrigues, Pedro (POR) (19	time	6.06	9.64	14.10	18.02	22.02	26.30	30.58	35.02	39.58	44.46		49.90	5 / 4				
reaction time 0.162	interval		3.58	4.46	3.92	4.00	4.28	4.28	4.44	4.56	4.88	5.44			11.96	12.56	13.88	
	velocity	7.43	9.78	7.85	8.93	8.75	8.18	8.18	7.88	7.68	7.17	7.35	8.02		8.78	8.36	7.56	
H1 lead leg	strides	21	13	13	13	13	14	14	15	15	15	18.4	164.4					
Borsumato, Anthony (GBR)	time	6.10	9.86	13.74	17.70	21.70	25.90	30.50	35.02	39.90			50.73	4 / 5				
reaction time 0.155	interval		3.76	3.88	3.96	4.00	4.20	4.60	4.52	4.88					11.60	12.80		
	velocity	7.38	9.31	9.02	8.84	8.75	8.33	7.61	7.74	7.17			7.88		9.05	8.20		
H1 lead leg	strides	21	13	13	13	13	14	15	15	16			133					
Pochanis, Konstantinos (CY	time	6.22	10.02	13.94	17.94	21.98	26.34	30.98	35.70	40.54			51.20	3 / 6				
reaction time 0.244	interval		3.80	3.92	4.00	4.04	4.36	4.64	4.72	4.84					11.72	13.04		
	velocity	7.23	9.21	8.93	8.75	8.66	8.03	7.54	7.42	7.23			7.81		8.96	8.05		
H1 lead leg	strides	22	14	14	14	14	15	16	16	16			141					
Beckenham, Matt (AUS) (197	time	6.18	10.10	14.26	18.42	22.74	27.30	31.86	36.38				51.27	8 / 7				
reaction time 0.176	interval		3.92	4.16	4.16	4.32	4.56	4.56	4.52						12.24	13.44		
	velocity	7.28	8.93	8.41	8.41	8.10	7.68	7.68	7.74				7.80		8.58	7.81		
H1 lead leg	strides	21	14	14	14	14	15	15	15				122					
Weakley, Ian (JAM) (1974)	time	6.02	9.86	13.90	17.94	22.06	26.34	30.74	35.34	40.22			52.18	2 / 8				
reaction time 0.179	interval		3.84	4.04	4.04	4.12	4.28	4.40	4.60	4.88					11.92	12.80		
	velocity	7.48	9.11	8.66	8.66	8.50	8.18	7.95	7.61	7.17			7.67		8.81	8.20		
H1 lead leg	strides	22	14	15	14	15	15	15	15	16			141					

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Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Rawlinson, Christopher (GB	time	5.96	9.60	13.36	17.16	21.08		25.16	29.52	34.36	39.80	45.16		51.30	3 / 1			
reaction time 0.184	interval		3.64	3.76	3.80	3.92		4.08	4.36	4.84	5.44	5.36	6.14			11.20	12.36	15.64
	velocity	7.55	9.62	9.31	9.21	8.93		8.58	8.03	7.23	6.43	6.53	6.51	7.80		9.38	8.50	6.71
H1 lead leg	strides	22	14	14	14	14		14	14	15	17	17	20	175				
Januszewski, Paweł (POL) (19	time	6.08	9.88	13.64	17.48	21.44		25.60	30.08	34.80	40.04	45.28		51.40	2 / 2			
reaction time 0.163	interval		3.80	3.76	3.84	3.96		4.16	4.48	4.72	5.24	5.24	6.12			11.40	12.60	15.20
	velocity	7.40	9.21	9.31	9.11	8.84		8.41	7.81	7.42	6.68	6.68	6.54	7.78		9.21	8.33	6.91
H1 lead leg	strides	22	14	14	14	14		14	14	15	15	15	19.7	170.7				
Bédi, Tibor (HUN) (1974)	time	5.92	9.68	13.64	17.64	21.80		26.00	30.36	35.04	40.24	45.48		51.54	7 / 3			
reaction time 0.169	interval		3.76	3.96	4.00	4.16		4.20	4.36	4.68	5.20	5.24	6.06			11.72	12.72	15.12
	velocity	7.60	9.31	8.84	8.75	8.41		8.33	8.03	7.48	6.73	6.68	6.60	7.76		8.96	8.25	6.94
H1 lead leg	strides	21	13	14	14	14		14	15	15	17	17	20.9	174.9				
Harden, Ken (ZIM) (1973)	time	6.28	10.00	13.92	17.84	21.88		26.00	30.40	35.24	40.48	45.72		51.83	5 / 4			
reaction time 0.435	interval		3.72	3.92	3.92	4.04		4.12	4.40	4.84	5.24	5.24	6.11			11.56	12.56	15.32
	velocity	7.17	9.41	8.93	8.93	8.66		8.50	7.95	7.23	6.68	6.68	6.55	7.72		9.08	8.36	6.85
H1 lead leg	strides	22	13	13	13	13		13	13	15	17	17	19.7	168.7				
Viarshynin, Leonid (BLR) (19	time	6.08	9.92	13.84	17.80	21.80		25.96	30.28	34.92	40.28	45.64		51.84	4 / 5			
reaction time 0.151	interval		3.84	3.92	3.96	4.00		4.16	4.32	4.64	5.36	5.36	6.20			11.72	12.48	15.36
	velocity	7.40	9.11	8.93	8.84	8.75		8.41	8.10	7.54	6.53	6.53	6.45	7.72		8.96	8.41	6.84
H1 lead leg	strides	21	13	13	13	13		14	14	15	17	17	20	170				
Juricic, Darko (CRO) (1969)	time	6.04	9.92	13.76	17.72	21.80		25.96	30.64	35.60	40.88	46.16		52.39	1 / 6			
reaction time 0.167	interval		3.88	3.84	3.96	4.08		4.16	4.68	4.96	5.28	5.28	6.23			11.68	12.92	15.52
	velocity	7.45	9.02	9.11	8.84	8.58		8.41	7.48	7.06	6.63	6.63	6.42	7.64		8.99	8.13	6.77
H1 lead leg	strides	22	14	14	14	14		14	16	17	18	18	21.9	182.9				
Al-Najem, Zahirudin (SYR) (	time	6.00	9.84	13.72	17.68	21.76		26.00	30.68	35.60	41.16			52.70	6 / 7			
reaction time 0.160	interval		3.84	3.88	3.96	4.08		4.24	4.68	4.92	5.56					11.68	17.92	
	velocity	7.50	9.11	9.02	8.84	8.58		8.25	7.48	7.11	6.29			7.59		8.99	5.86	
H1 lead leg	strides	21	13	13	13	13		13	14	16	16			132				
Dzhivondov, Ilya (BUL) (197	time	6.08	9.88	13.80	17.80	22.00		26.36	30.92	35.88				54.36	8 / 8			
reaction time 0.279	interval		3.80	3.92	4.00	4.20		4.36	4.56	4.96						11.72	13.12	
	velocity	7.40	9.21	8.93	8.75	8.33		8.03	7.68	7.06				7.36		8.96	8.00	
H1 lead leg	strides	22	13	13	13	14		14	15	15				119				

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Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mužík, Jiri (CZE) (1976)	time	6.00	9.78	13.64	17.60	21.64		25.80	30.20	34.80	39.76	44.68		50.11	8 / 1			
reaction time 0.216	interval		3.78	3.86	3.96	4.04		4.16	4.40	4.60	4.96	4.92	5.43			11.60	12.60	14.48
	velocity	7.50	9.26	9.07	8.84	8.66		8.41	7.95	7.61	7.06	7.11	7.37	7.98		9.05	8.33	7.25
H1 lead leg	strides	21	13	13	13	13		14	14	14	16	16	18.9	165.9				
Thomas, Eric (USA) (1973)	time	6.08	9.88	13.72	17.64	21.60		25.72	30.20	34.76	39.64	44.60		50.16	6 / 2			
reaction time 0.170	interval		3.80	3.84	3.92	3.96		4.12	4.48	4.56	4.88	4.96	5.56			11.56	12.56	14.40
	velocity	7.40	9.21	9.11	8.93	8.84		8.50	7.81	7.68	7.17	7.06	7.19	7.97		9.08	8.36	7.29
H1 lead leg	strides	21	13	13	13	13		13	14	14	15	15	17.4	161.4				

Iakovákis, Periklís (GRE) (197	time	6.00	9.84	13.76	17.72	21.72	25.72	30.12	34.72	39.68	44.72		50.20	1 / 3			
reaction time 0.165	interval		3.84	3.92	3.96	4.00	4.00	4.40	4.60	4.96	5.04	5.48			11.72	12.40	14.60
	velocity	7.50	9.11	8.93	8.84	8.75	8.75	7.95	7.61	7.06	6.94	7.30	7.97		8.96	8.47	7.19
H1 lead leg	strides	22	14	14	14	14	14	14	15	16	16	18.6	171.6				
Kawamura, Hideaki (JPN) (19	time	5.96	9.68	13.60	17.52	21.52	25.64	30.04	34.60	39.68	44.72		50.68	4 / 4			
reaction time 0.172	interval		3.72	3.92	3.92	4.00	4.12	4.40	4.56	5.08	5.04	5.96			11.56	12.52	14.68
	velocity	7.55	9.41	8.93	8.93	8.75	8.50	7.95	7.68	6.89	6.94	6.71	7.89		9.08	8.39	7.15
H1 lead leg	strides	21	14	14	14	14	15	15	15	17	16	20	175				
Zadoinov, Vadim (MAD) (196	time	6.04	9.84	13.84	17.84	21.84	26.00	30.44	35.16	40.28			51.08	7 / 5			
reaction time 0.173	interval		3.80	4.00	4.00	4.00	4.16	4.44	4.72	5.12					11.80	12.60	
	velocity	7.45	9.21	8.75	8.75	8.75	8.41	7.88	7.42	6.84			7.83		8.90	8.33	
H1 lead leg	strides	20	13	13	13	13	13	13	14	15			127				
Sdad, Mustapha (MAR) (197	time	6.04	10.16	14.20	18.36	22.56	26.88	31.36	36.04	40.96	45.92		51.39	2 / 6			
reaction time 0.216	interval		4.12	4.04	4.16	4.20	4.32	4.48	4.68	4.92	4.96	5.47			12.32	13.00	14.56
	velocity	7.45	8.50	8.66	8.41	8.33	8.10	7.81	7.48	7.11	7.06	7.31	7.78		8.52	8.08	7.21
H1 lead leg	strides	21	15	15	15	15	15	15	15	17	17		160				
McGuick, Tom (IRL) (1971)	time	5.96	9.80	13.72	17.72	21.84	25.92	30.48	35.40	40.48	45.72		51.73	3 / 7			
reaction time 0.183	interval		3.84	3.92	4.00	4.12	4.08	4.56	4.92	5.08	5.24	6.01			11.76	12.76	15.24
	velocity	7.55	9.11	8.93	8.75	8.50	8.58	7.68	7.11	6.89	6.68	6.66	7.73		8.93	8.23	6.89
H1 lead leg	strides	22	14	14	14	14	15	17	16	17	18		161				
Lee Doo-Yeon (KOR) (1975)	time	6.12	10.04	14.04	18.16	22.32	26.60	31.40	36.20				52.61	5 / 8			
reaction time 0.192	interval		3.92	4.00	4.12	4.16	4.28	4.80	4.80						12.04	13.24	
	velocity	7.35	8.93	8.75	8.50	8.41	8.18	7.29	7.29				7.60		8.72	7.93	
H1 lead leg	strides	21	13	13	13	13	13	15	15				116				

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		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Taylor, Angelo (USA) (1978)	time	6.06	9.90	13.74	17.58	21.58		25.66	29.94	34.50	39.18	43.82		49.48	8 / 1			
reaction time 0.185	interval		3.84	3.84	3.84	4.00		4.08	4.28	4.56	4.68	4.64	5.66			11.52	12.36	13.88
	velocity	7.43	9.11	9.11	9.11	8.75		8.58	8.18	7.68	7.48	7.54	7.07	8.08		9.11	8.50	7.56
H1 lead leg	strides	21	13	13	13	13		13	13	14	14	14	17.5	158.5				
Morgan, Dinsdale (JAM) (19	time	5.90	9.66	13.54	17.54	21.66		25.94	30.34	34.86	39.42	44.14		49.64	6 / 2			
reaction time 0.171	interval		3.76	3.88	4.00	4.12		4.28	4.40	4.52	4.56	4.72	5.50			11.64	12.80	13.80
	velocity	7.63	9.31	9.02	8.75	8.50		8.18	7.95	7.74	7.68	7.42	7.27	8.06		9.02	8.20	7.61
H1 lead leg	strides	22	14	14	14	14		15	15	15	15	15	18.5	171.5				
Faye, Ibou (SEN) (1969)	time	6.02	9.74	13.62	17.58	21.66		25.90	30.38	34.90	39.62	44.46		50.09	4 / 3			
reaction time 0.188	interval		3.72	3.88	3.96	4.08		4.24	4.48	4.52	4.72	4.84	5.63			11.56	12.80	14.08
	velocity	7.48	9.41	9.02	8.84	8.58		8.25	7.81	7.74	7.42	7.23	7.10	7.99		9.08	8.20	7.46
H1 lead leg	strides	22	13	13	13	13		13	14	14	15	15	18	163				
Ratnayake, Harijan (SRI) (197	time	6.54	10.58	14.58	18.62	22.74		27.18	31.66	36.26				50.43	7 / 4			
reaction time 0.346	interval		4.04	4.00	4.04	4.12		4.44	4.48	4.60						12.08	13.04	
	velocity	6.88	8.66	8.75	8.66	8.50		7.88	7.81	7.61				7.93		8.69	8.05	
H1 lead leg	strides	22	14	14	13	13		14	14	14				118				
Isakov, Erkinjon (UZB) (1974	time	6.10	10.14	14.14	18.30	22.62		26.70	31.18	35.74	40.34	45.02		50.71	5 / 5			
reaction time 0.182	interval		4.04	4.00	4.16	4.32		4.08	4.48	4.56	4.60	4.68	5.69			12.20	12.88	13.84
	velocity	7.38	8.66	8.75	8.41	8.10		8.58	7.81	7.68	7.61	7.48	7.03	7.89		8.61	8.15	7.59
H1 lead leg	strides	22	14	14	14	14		14	14	15	15	15		151				
Maritim, Hillary (KEN) (1973)	time	6.10	9.98	13.94	17.98	22.14		26.46	30.90	35.54	40.26	45.34		51.04	3 / 6			
reaction time 0.180	interval		3.88	3.96	4.04	4.16		4.32	4.44	4.64	4.72	5.08	5.70			11.88	12.92	14.44
	velocity	7.38	9.02	8.84	8.66	8.41		8.10	7.88	7.54	7.42	6.89	7.02	7.84		8.84	8.13	7.27
H1 lead leg	strides	22	15	15	15	15		15	15	15	15	17		159				
Omodiale, Sylvester (NGR) (	time	5.98	9.78	13.70	17.78	22.06		26.30	30.62	35.30	40.10	45.14		51.06	2 / 7			
reaction time 0.189	interval		3.80	3.92	4.08	4.28		4.24	4.32	4.68	4.80	5.04	5.92			11.80	12.84	14.52
	velocity	7.53	9.21	8.93	8.58	8.18		8.25	8.10	7.48	7.29	6.94	6.76	7.83		8.90	8.18	7.23
H1 lead leg	strides	22	15	15	15	15		15	15	16	16	17		161				

Heat 2

date 24-Sep-00

Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mori, Fabrizio (ITA) (1969)	time	6.22	10.06	13.94	17.86	21.94		26.06		34.86	39.38	43.98		49.35	5 / 1			
reaction time 0.162	interval		3.84	3.88	3.92	4.08		4.12		8.80	4.52	4.60	5.37			11.64		
	velocity	7.23	9.11	9.02	8.93	8.58		8.50		7.95	7.74	7.61	7.45	8.11		9.02		
H1 lead leg	strides	22	14	14	14	14		14	14	15	15	15	18.3	169.3				
Gorban, Boris (RUS) (1978)	time	5.98	9.82	13.62	17.54	21.54		25.70		34.66	39.30	43.98		49.44	8 / 2			
reaction time 0.195	interval		3.84	3.80	3.92	4.00		4.16		8.96	4.64	4.68	5.46			11.56		
	velocity	7.53	9.11	9.21	8.93	8.75		8.41		7.81	7.54	7.48	7.33	8.09		9.08		
H1 lead leg	strides	20	13	13	13	13		13			14	14	17.8	130.8				

Sańchez, Félix (DOM) (1977)		time	5.86	9.58	13.38	17.18	21.14		25.34		35.54	39.34	44.22		49.70	4 / 3		
reaction time	0.142	interval		3.72	3.80	3.80	3.96		4.20		10.20	3.80	4.88	5.48			11.32	
		velocity	7.68	9.41	9.21	9.21	8.84		8.33		6.86	9.21	7.17	7.30	8.05		9.28	
H1 lead leg		strides	21	13	13	13	13		13	14	15	15	15	18.2	163.2			
Young, Blair (AUS) (1971)		time	6.06	9.82	13.74	17.74	21.86		26.18		35.42	39.90	44.50		49.75	6 / 4		
reaction time	0.193	interval		3.76	3.92	4.00	4.12		4.32		9.24	4.48	4.60	5.25			11.68	
		velocity	7.43	9.31	8.93	8.75	8.50		8.10		7.58	7.81	7.61	7.62	8.04		8.99	
H1 lead leg		strides	21	13	13	14	14		14	15	15	15	15	18.4	167.4			
Chen Tein-Wen (TAI) (1978)		time	6.10	9.90	13.82	17.86	21.94		26.26		34.98	39.54	44.34		49.93	2 / 5		
reaction time	0.180	interval		3.80	3.92	4.04	4.08		4.32		8.72	4.56	4.80	5.59	NR		11.76	
		velocity	7.38	9.21	8.93	8.66	8.58		8.10		8.03	7.68	7.29	7.16	8.01		8.93	
H1 lead leg		strides	21	14	14	14	14		14	14	15	15	15	19.1	169.1			
Keter, Erick (KEN) (1966)		time	6.18	10.02	13.90	17.98	22.10		26.34		35.22	39.86	44.58		50.06	3 / 6		
reaction time	0.269	interval		3.84	3.88	4.08	4.12		4.24		8.88	4.64	4.72	5.48			11.80	
		velocity	7.28	9.11	9.02	8.58	8.50		8.25		7.88	7.54	7.42	7.30	7.99		8.90	
H1 lead leg		strides	21	13	15	15	15		15	15	15	15	15	18.1	172.1			
Yamazaki, Kazuhiko (JPN) (1		time	5.90	9.66	13.58	17.58	21.70		25.98		35.10	39.78	44.54		50.15	1 / 7		
reaction time	0.177	interval		3.76	3.92	4.00	4.12		4.28		9.12	4.68	4.76	5.61			11.68	
		velocity	7.63	9.31	8.93	8.75	8.50		8.18		7.68	7.48	7.35	7.13	7.98		8.99	
H1 lead leg		strides																
Rakotoarimaindry, Yvon (MA		time	5.98	9.82	13.70	17.66	21.70		26.06		35.14	39.86	44.62		50.15	7 / 8		
reaction time	0.185	interval		3.84	3.88	3.96	4.04		4.36		9.08	4.72	4.76	5.53			11.68	
		velocity	7.53	9.11	9.02	8.84	8.66		8.03		7.71	7.42	7.35	7.23	7.98		8.99	
H1 lead leg		strides	21	14	14	14	14		14			15	15		121			

Heat 1

date 24-Sep-00

Ditroilo (2001) - analysis of the race distribution for male 400m hurdlers competing at the 2000 sydney olympic games

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Herbert, Llewellyn (RSA) (19		time	5.98	9.82	13.62	17.50	21.42		25.58	29.82	34.18	38.74	43.62		49.25	8 / 1			
reaction time	0.171	interval		3.84	3.80	3.88	3.92		4.16	4.24	4.36	4.56	4.88	5.63			11.52	12.32	13.80
		velocity	7.53	9.11	9.21	9.02	8.93		8.41	8.25	8.03	7.68	7.17	7.10	8.12		9.11	8.52	7.61
H1 lead leg		strides	22	14	14	14	14		15	15	15	15	16	19.2	173.2				
Goller, Thomas (GER) (1977)		time	5.94	9.58	13.30	17.10	21.02		25.10	29.50	33.94	38.74	43.62		49.32	7 / 2			
reaction time	0.154	interval		3.64	3.72	3.80	3.92		4.08	4.40	4.44	4.80	4.88	5.70			11.16	12.40	14.12
		velocity	7.58	9.62	9.41	9.21	8.93		8.58	7.95	7.88	7.29	7.17	7.02	8.11		9.41	8.47	7.44
H1 lead leg		strides	21	13	13	13	13		13	14	14	15	15	19.2	163.2				
Mashchenko, Ruslan (RUS)		time	5.94	9.62	13.38	17.22	21.18		25.34	29.62	34.14	39.06	44.06		50.01	3 / 3			
reaction time	0.225	interval		3.68	3.76	3.84	3.96		4.16	4.28	4.52	4.92	5.00	5.95			11.28	12.40	14.44
		velocity	7.58	9.51	9.31	9.11	8.84		8.41	8.18	7.74	7.11	7.00	6.72	8.00		9.31	8.47	7.27
H1 lead leg		strides	20	13	13	13	13		13	14	14	15	15	18.3	161.3				
Robinson, Rohan (AUS) (19		time	6.02	9.82	13.62	17.54	21.54		25.70	30.10	34.70	39.74	44.82		50.80	4 / 4			
reaction time	0.173	interval		3.80	3.80	3.92	4.00		4.16	4.40	4.60	5.04	5.08	5.98			11.52	12.56	14.72
		velocity	7.48	9.21	9.21	8.93	8.75		8.41	7.95	7.61	6.94	6.89	6.69	7.87		9.11	8.36	7.13
H1 lead leg		strides	21	14	14	14	14		14	14	15	16	16		152				
Smith, Willie (NAM) (1977)		time	6.06	9.78	13.66	17.62	21.66		25.82	30.34	35.02	39.90			50.89	5 / 5			
reaction time	0.156	interval		3.72	3.88	3.96	4.04		4.16	4.52	4.68	4.88					11.56	12.72	
		velocity	7.43	9.41	9.02	8.84	8.66		8.41	7.74	7.48	7.17			7.86		9.08	8.25	
H1 lead leg		strides	22	15	15	15	15		17	17	17	17			150				
Zbinden, Carlos (CHI)		time	6.10	9.90	13.82	17.70	21.70		25.94	30.38	34.98	40.02			51.36	6 / 6			
reaction time	0.180	interval		3.80	3.92	3.88	4.00		4.24	4.44	4.60	5.04					11.60	12.68	
		velocity	7.38	9.21	8.93	9.02	8.75		8.25	7.88	7.61	6.94			7.79		9.05	8.28	
H1 lead leg		strides	21	13	13	13	13		14	14	15	16			132				
Houston, Victor (BAR) (1974		time	5.90	9.58	13.34	17.22	21.22		25.54	30.10	34.86	39.98	45.34		51.51	2 / 7			
reaction time	0.179	interval		3.68	3.76	3.88	4.00		4.32	4.56	4.76	5.12	5.36	6.17			11.32	12.88	15.24
		velocity	7.63	9.51	9.31	9.02	8.75		8.10	7.68	7.35	6.84	6.53	6.48	7.77		9.28	8.15	6.89
H1 lead leg		strides		13	13	13	13		14	14	15	15	16		126				

2000 ISTAF (Berlin, GER)

FINAL

date 01-Sep-00

Graubner (2009) - http://www.fgs.uni-halle.de

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Taylor, Angelo (USA) (1978)		time	6.03	9.84	13.67	17.53	21.55		25.72	30.06	34.34	38.72	43.27		48.26	/ 1			
reaction time		interval		3.81	3.83	3.86	4.02		4.17	4.34	4.28	4.38	4.55	4.99			11.50	12.53	13.21
		velocity	7.46	9.19	9.14	9.07	8.71		8.39	8.06	8.18	7.99	7.69	8.02	8.29		9.13	8.38	7.95
H1 lead leg		strides																	
Matete, Samuel (ZAM) (1968)		time	6.21	10.08	13.98	17.92	21.90		25.98	30.18	34.41	38.78	43.26		48.38	/ 2			
reaction time		interval		3.87	3.90	3.94	3.98		4.08	4.20	4.23	4.37	4.48	5.12			11.71	12.26	13.08
		velocity	7.25	9.04	8.97	8.88	8.79		8.58	8.33	8.27	8.01	7.81	7.81	8.27		8.97	8.56	8.03
H1 lead leg		strides																	

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Januszewski, Paweł (POL) (19	time	6.07	9.93	13.76	17.69	21.67	25.81	29.98	34.28	38.76	43.34		48.49	/ 3			
reaction time	interval		3.86	3.83	3.93	3.98	4.14	4.17	4.30	4.48	4.58	5.15			11.62	12.29	13.36
	velocity	7.41	9.07	9.14	8.91	8.79	8.45	8.39	8.14	7.81	7.64	7.77	8.25		9.04	8.54	7.86
H1 lead leg	strides																
Thomas, Eric (USA) (1973)	time	6.09	9.86	13.66	17.48	21.44	25.47	29.76	34.04	38.60	43.23		48.55	/ 4			
reaction time	interval		3.77	3.80	3.82	3.96	4.03	4.29	4.28	4.56	4.63	5.32			11.39	12.28	13.47
	velocity	7.39	9.28	9.21	9.16	8.84	8.68	8.16	8.18	7.68	7.56	7.52	8.24		9.22	8.55	7.80
H1 lead leg	strides																
Goller, Thomas (GER) (1977)	time	5.98	9.68	13.46	17.35	21.40	25.52	29.83	34.16	38.74	43.44		48.82	/ 5			
reaction time	interval		3.70	3.78	3.89	4.05	4.12	4.31	4.33	4.58	4.70	5.38			11.37	12.48	13.61
	velocity	7.53	9.46	9.26	9.00	8.64	8.50	8.12	8.08	7.64	7.45	7.43	8.19		9.23	8.41	7.71
H1 lead leg	strides																

1999 IAAF World Championships (Sevilla, ESP)

FINAL

date 27-Aug-99

Sanchez (1999) - Sevilla '99: análisis de la carreras con villas

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mori, Fabrizio (ITA) (1969)		time	5.62	9.36	13.12	16.96	20.89		24.92	29.06	33.34	37.68	42.16		47.72	3 / 1			
reaction time	0.157	interval		3.74	3.76	3.84	3.93		4.03	4.14	4.28	4.34	4.48	5.56	NR PB		11.34	12.10	13.10
		velocity	8.01	9.36	9.31	9.11	8.91		8.68	8.45	8.18	8.06	7.81	7.19	8.38		9.26	8.68	8.02
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Diagana, Stéphane (FRA) (1!		time	5.44	9.09	12.77	16.54	20.39		24.41	28.77	33.08	37.59	42.19		48.12	5 / 2			
reaction time	0.139	interval		3.65	3.68	3.77	3.85		4.02	4.36	4.31	4.51	4.60	5.93			11.10	12.23	13.42
		velocity	8.27	9.59	9.51	9.28	9.09		8.71	8.03	8.12	7.76	7.61	6.75	8.31		9.46	8.59	7.82
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	19	163				
Schelbert, Marcel (SUI) (1976		time	5.66	9.42	13.18	17.02	21.17		25.14	29.32	33.70	38.19	42.70		48.13	7 / 3			
reaction time	0.125	interval		3.76	3.76	3.84	4.15		3.97	4.18	4.38	4.49	4.51	5.43	NR PB		11.36	12.30	13.38
		velocity	7.95	9.31	9.31	9.11	8.43		8.82	8.37	7.99	7.80	7.76	7.37	8.31		9.24	8.54	7.85
H1 lead leg	L	strides	22	13	13	13	14		14	14	14	15	15	18.5	165.5				
de Araújo, Eronilde (BRA) (1		time	5.72	9.39	13.13	16.93	20.85		24.84	29.06	33.37	37.85	42.46		48.13	8 / 4			
reaction time	0.205	interval		3.67	3.74	3.80	3.92		3.99	4.22	4.31	4.48	4.61	5.67			11.21	12.13	13.40
		velocity	7.87	9.54	9.36	9.21	8.93		8.77	8.29	8.12	7.81	7.59	7.05	8.31		9.37	8.66	7.84
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	15	17.5	160.5				
Januszewski, Paweł (POL) (19		time	5.54	9.24	13.00	16.77	20.74		24.77	29.00	33.21	37.64	42.27		48.19	4 / 5			
reaction time	0.138	interval		3.70	3.76	3.77	3.97		4.03	4.23	4.21	4.43	4.63	5.92			11.23	12.23	13.27
		velocity	8.12	9.46	9.31	9.28	8.82		8.68	8.27	8.31	7.90	7.56	6.76	8.30		9.35	8.59	7.91
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18.5	168.5				
Woody, Joey (USA) (1973)		time	5.62	9.25	12.89	16.65	20.59		24.59	28.91	33.29	37.84	42.90		48.77	6 / 6			
reaction time	0.175	interval		3.63	3.64	3.76	3.94		4.00	4.32	4.38	4.55	5.06	5.87			11.03	12.26	13.99
		velocity	8.01	9.64	9.62	9.31	8.88		8.75	8.10	7.99	7.69	6.92	6.81	8.20		9.52	8.56	7.51
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	15	17.5	160.5				
Morgan, Dinsdale (JAM) (19		time	5.46	9.27	12.98	16.90	20.94		25.07	29.42	33.81	38.33	43.09		48.92	2 / 7			
reaction time	0.164	interval		3.81	3.71	3.92	4.04		4.13	4.35	4.39	4.52	4.76	5.83			11.44	12.52	13.67
		velocity	8.24	9.19	9.43	8.93	8.66		8.47	8.05	7.97	7.74	7.35	6.86	8.18		9.18	8.39	7.68
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	15	16	18.5	171.5				
Zellner, Torrance (USA) (197		time	5.66	9.38	13.10	16.88	20.68		24.72	28.92	33.49	38.05	42.86		49.06	1 / 8			
reaction time	0.133	interval		3.72	3.72	3.78	3.80		4.04	4.20	4.57	4.56	4.81	6.20			11.22	12.04	13.94
		velocity	7.95	9.41	9.41	9.26	9.21		8.66	8.33	7.66	7.68	7.28	6.45	8.15		9.36	8.72	7.53
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	15	18	159				

Semi-Final 2

date 25-Aug-99

Sanchez (1999) - Sevilla '99: análisis de la carreras con villas

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (1!		time	5.57	9.24	13.03	16.81	20.72		24.73	28.98	33.39	37.91	42.46		48.18	4 / 1			
reaction time	0.161	interval		3.67	3.79	3.78	3.91		4.01	4.25	4.41	4.52	4.55	5.72			11.24	12.17	13.48
		velocity	8.08	9.54	9.23	9.26	8.95		8.73	8.24	7.94	7.74	7.69	6.99	8.30		9.34	8.63	7.79
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	18	162				
Mori, Fabrizio (ITA) (1969)		time	5.78	9.51	13.31	17.21	21.10		25.14	29.39	33.74	38.12	42.64		48.29	5 / 2			
reaction time	0.164	interval		3.73	3.80	3.90	3.89		4.04	4.25	4.35	4.38	4.52	5.65			11.43	12.18	13.25
		velocity	7.79	9.38	9.21	8.97	9.00		8.66	8.24	8.05	7.99	7.74	7.08	8.28		9.19	8.62	7.92
H1 lead leg	L	strides	22	14	14	14	14		14	14	15	15	15	18	169				
de Araújo, Eronilde (BRA) (1		time	5.70	9.47	13.28	17.09	21.07		25.09	29.28	33.57	38.04	42.68		48.41	6 / 3			
reaction time	0.174	interval		3.77	3.81	3.81	3.98		4.02	4.19	4.29	4.47	4.64	5.73			11.39	12.19	13.40
		velocity	7.89	9.28	9.19	9.19	8.79		8.71	8.35	8.16	7.83	7.54	6.98	8.26		9.22	8.61	7.84
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	14	17.5	159.5				
Zellner, Torrance (USA) (197		time	5.68	9.45	13.25	17.05	21.08		25.09	29.21	33.62	38.22	42.85		48.53	7 / 4			
reaction time	0.129	interval		3.77	3.80	3.80	4.03		4.01	4.12	4.41	4.60	4.63	5.68			11.37	12.16	13.64
		velocity	7.92	9.28	9.21	9.21	8.68		8.73	8.50	7.94	7.61	7.56	7.04	8.24		9.23	8.63	7.70

H1 lead leg	L	strides	20	13	13	13	13	13	13	13	14	14	17	156				
Morgan, Dinsdale (JAM) (19		time	5.58	9.34	13.14	17.06	21.17	25.30	29.62	34.05	38.45	43.12		48.71	3 / 5			
reaction time	0.179	interval		3.76	3.80	3.92	4.11	4.13	4.32	4.43	4.40	4.67	5.59			11.48	12.56	13.50
		velocity	8.06	9.31	9.21	8.93	8.52	8.47	8.10	7.90	7.95	7.49	7.16	8.21		9.15	8.36	7.78
H1 lead leg	L	strides	22	14	14	14	14	14	14	15	15	15	18.5	169.5				
Bédi, Tibor (HUN) (1974)		time	5.65	9.53	13.57	17.62	21.72	25.93	30.16	34.50	38.85	43.28		49.00	8 / 6			
reaction time	0.215	interval		3.88	4.04	4.05	4.10	4.21	4.23	4.34	4.35	4.43	5.72	PB		11.97	12.54	13.12
		velocity	7.96	9.02	8.66	8.64	8.54	8.31	8.27	8.06	8.05	7.90	6.99	8.16		8.77	8.37	8.00
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	19.5	171.5				
Silva, Carlos (POR) (1974)		time	5.66	9.35	13.11	17.25	21.28	25.44	29.67	34.02	38.54	43.31		49.45	2 / 7			
reaction time	0.165	interval		3.69	3.76	4.14	4.03	4.16	4.23	4.35	4.52	4.77	6.14			11.59	12.42	13.64
		velocity	7.95	9.49	9.31	8.45	8.68	8.41	8.27	8.05	7.74	7.34	6.51	8.09		9.06	8.45	7.70
H1 lead leg	L	strides	20	13	13	15	14	14	15	15	15	15	20	169				
Goller, Thomas (GER) (1977)		time	5.58	9.26	13.02	16.87	20.78	24.94	29.50	34.12	38.82	43.74		49.89	1 / 8			
reaction time	0.178	interval		3.68	3.76	3.85	3.91	4.16	4.56	4.62	4.70	4.92	6.15			11.29	12.63	14.24
		velocity	8.06	9.51	9.31	9.09	8.95	8.41	7.68	7.58	7.45	7.11	6.50	8.02		9.30	8.31	7.37
H1 lead leg	L	strides	20	13	13	13	13	13	15	15	15	15	19	164				

Semi-Final 1

date 25-Aug-99

Sanchez (1999) - Sevilla '99: análisis de la carreras con villas

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Woody, Joey (USA) (1973)		time	5.64	9.36	13.14	17.01	20.99		25.06	29.31	33.70	38.24	42.90		48.55	8 / 1			
reaction time	0.214	interval		3.72	3.78	3.87	3.98		4.07	4.25	4.39	4.54	4.66	5.65			11.37	12.30	13.59
		velocity	7.98	9.41	9.26	9.04	8.79		8.60	8.24	7.97	7.71	7.51	7.08	8.24		9.23	8.54	7.73
H1 lead leg	R	strides	21	13	13	13	13		13	13	14	14	15	17.5	159.5				
Januszewski, Paweł (POL) (19		time	5.81	9.59	13.39	17.21	21.25		25.30	29.51	33.85	38.20	42.79		48.63	7 / 2			
reaction time	0.255	interval		3.78	3.80	3.82	4.04		4.05	4.21	4.34	4.35	4.59	5.84			11.40	12.30	13.28
		velocity	7.75	9.26	9.21	9.16	8.66		8.64	8.31	8.06	8.05	7.63	6.85	8.23		9.21	8.54	7.91
H1 lead leg	L	strides	21	14	14	14	14		14	14	15	15	15	18	168				
Schelbert, Marcel (SUI) (1976		time	5.78	9.59	13.39	17.33	21.29		25.60	29.86	34.32	38.83	43.33		48.80	6 / 3			
reaction time	0.139	interval		3.81	3.80	3.94	3.96		4.31	4.26	4.46	4.51	4.50	5.47			11.55	12.53	13.47
		velocity	7.79	9.19	9.21	8.88	8.84		8.12	8.22	7.85	7.76	7.78	7.31	8.20		9.09	8.38	7.80
H1 lead leg	L	strides	22	13	13	13	13		14	14	15	15	15	19	166				
Thompson, Kemel (JAM) (19		time	5.62	9.40	13.27	17.19	21.30		25.44	29.68	33.99	38.36	42.99		48.95	5 / 4			
reaction time	0.153	interval		3.78	3.87	3.92	4.11		4.14	4.24	4.31	4.37	4.63	5.96			11.57	12.49	13.31
		velocity	8.01	9.26	9.04	8.93	8.52		8.45	8.25	8.12	8.01	7.56	6.71	8.17		9.08	8.41	7.89
H1 lead leg	L	strides	22	14	14	14	14		14	15	15	15	15	19.5	171.5				
Muzik, Juri (CZE) (1976)		time	5.60	9.38	13.18	17.19	21.35		25.51	29.85	34.30	38.82	43.50		49.17	2 / 5			
reaction time	0.179	interval		3.78	3.80	4.01	4.16		4.16	4.34	4.45	4.52	4.68	5.67			11.59	12.66	13.65
		velocity	8.04	9.26	9.21	8.73	8.41		8.41	8.06	7.87	7.74	7.48	7.05	8.14		9.06	8.29	7.69
H1 lead leg	R	strides	21	13	13	13	14		14	14	14	15	15	18.5	164.5				
Matete, Samuel (ZAM) (1968)		time	5.68	9.44	13.23	17.25	21.31		25.38	29.66	34.10	38.59	43.28		49.28	3 / 6			
reaction time	0.169	interval		3.76	3.79	4.02	4.06		4.07	4.28	4.44	4.49	4.69	6.00			11.57	12.41	13.62
		velocity	7.92	9.31	9.23	8.71	8.62		8.60	8.18	7.88	7.80	7.46	6.67	8.12		9.08	8.46	7.71
H1 lead leg	L	strides	21	13	13	13	13		13	13	13	15	15	18.5	160.5				
Yamazaki, Kazuhiko (JPN) (1		time	5.69	9.44	13.24	17.16	21.22		25.38	29.70	34.21	38.75	43.47		49.46	4 / 7			
reaction time	0.172	interval		3.75	3.80	3.92	4.06		4.16	4.32	4.51	4.54	4.72	5.99			11.47	12.54	13.77
		velocity	7.91	9.33	9.21	8.93	8.62		8.41	8.10	7.76	7.71	7.42	6.68	8.09		9.15	8.37	7.63
H1 lead leg	L	strides	20	13	13	13	13		14	14	15	15	15	18	163				
Heusse, Jean-Laurent (FRA)		time	5.75	9.54	13.44	17.45	21.57		25.82	30.25	34.73	39.34	44.21		50.47	1 / 8			
reaction time	0.141	interval		3.79	3.90	4.01	4.12		4.25	4.43	4.48	4.61	4.87	6.26			11.70	12.80	13.96
		velocity	7.83	9.23	8.97	8.73	8.50		8.24	7.90	7.81	7.59	7.19	6.39	7.93		8.97	8.20	7.52
H1 lead leg	R	strides	21	13	13	13	14		14	15	15	15	15	19	167				

Heat 6

date 24-Aug-99

Sanchez (1999) - Sevilla '99: análisis de la carreras con villas

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Schelbert, Marcel (SUI) (1976		time	5.78	9.52	13.30	17.16	21.05		25.28	29.56	34.00	38.50	43.14		48.66	6 / 1			
reaction time	0.143	interval		3.74	3.78	3.86	3.89		4.23	4.28	4.44	4.50	4.64	5.52			11.38	12.40	13.58
		velocity	7.79	9.36	9.26	9.07	9.00		8.27	8.18	7.88	7.78	7.54	7.25	8.22		9.23	8.47	7.73
H1 lead leg	L	strides	22	13	13	13	13		14	14	15	15	15	19	166				

Heat 5

date 24-Aug-99

Sanchez (1999) - Sevilla '99: análisis de la carreras con villas

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (19		time	5.59	9.30	13.12	16.99	20.93		24.99	29.38	33.82	38.45	43.02		48.55	5 / 1			
reaction time	0.155	interval		3.71	3.82	3.87	3.94		4.06	4.39	4.44	4.63	4.57	5.53			11.40	12.39	13.64
		velocity	8.05	9.43	9.16	9.04	8.88		8.62	7.97	7.88	7.56	7.66	7.23	8.24		9.21	8.47	7.70
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	18	162				

Heat 3

date 24-Aug-99

Sanchez (1999) - Sevilla '99: análisis de la carreras con villas

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mori, Fabrizio (ITA) (1969)	time	5.96	9.84	13.78	17.68	21.72		25.92	30.22	34.70	39.11	43.59		49.07	6 / 1			
reaction time 0.152	interval		3.88	3.94	3.90	4.04		4.20	4.30	4.48	4.41	4.48	5.48			11.72	12.54	13.37
	velocity	7.55	9.02	8.88	8.97	8.66		8.33	8.14	7.81	7.94	7.81	7.30	8.15		8.96	8.37	7.85
H1 lead leg L	strides	22	14	14	14	14		14	14	15	15	15	18	169				

1998 European Championships (Budapest, HUN)

Sanchez (1998) - Budapest '98: análisis de la carreras con villas

FINAL date 20-Aug-98

Behm (1998) - analyse et commentaries: le 400m haies: Pavel la surprise!

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Januszewski, Paweł (POL) (19	time	5.9	9.8	13.6	17.4	21.2		25.2	29.3	33.6	38.1	42.7		48.17	3 / 1		*Behm (1998)*	
reaction time	interval		3.9	3.8	3.8	3.8		4.0	4.1	4.3	4.5	4.6	5.47	**NR / PB**		11.50	11.90	13.40
	velocity	7.63	8.97	9.21	9.21	9.21		8.75	8.54	8.14	7.78	7.61	7.31	8.30		9.13	8.82	7.84
H1 lead leg L	strides	21	14	14	14	14		13	14	14	15	15	18.5	166.5				
Mashchenko, Ruslan (RUS)	time	5.95	9.75	13.59	17.51	21.38		25.39	29.47	33.70	38.12	42.70		48.25	5 / 2		*Sanchez (1998)*	
reaction time	interval		3.80	3.84	3.92	3.87		4.01	4.08	4.23	4.42	4.58	5.55			11.56	11.96	13.23
	velocity	7.56	9.21	9.11	8.93	9.04		8.73	8.58	8.27	7.92	7.64	7.21	8.29		9.08	8.78	7.94
H1 lead leg L	strides	19	13	13	13	13		13	14	14	14	14	17	157				
Mori, Fabrizio (ITA) (1969)	time	6.2	10.3	14.2	18.1	22.2		26.3	30.4	34.6	38.9	43.4		48.71	7 / 3		*Behm (1998)*	
reaction time	interval		4.1	3.9	3.9	4.1		4.1	4.1	4.2	4.3	4.5	5.31			11.90	12.30	13.00
	velocity	7.26	8.54	8.97	8.97	8.54		8.54	8.54	8.33	8.14	7.78	7.53	8.21		8.82	8.54	8.08
H1 lead leg L	strides	22	14	14	14	14		14	14	15	15	15	18.5	169.5				
Silva, Carlos (POR) (1974)	time	6.1	9.8	13.6	17.5	21.5		25.6	29.7	34.0	38.5	43.3		49.02	6 / 4		*Behm (1998)*	
reaction time	interval		3.7	3.8	3.9	4.0		4.1	4.1	4.3	4.5	4.8	5.72			11.40	12.20	13.60
	velocity	7.38	9.46	9.21	8.97	8.75		8.54	8.54	8.14	7.78	7.29	6.99	8.16		9.21	8.61	7.72
H1 lead leg L	strides	20	13	13	13	14		14	15	15	15	15	19.5	166.5				
Zadoinov, Vadim (MOL) (196	time	6.05				21.57						43.70		49.10	4 / 5		*Sanchez (1998)*	
reaction time	interval					15.52						22.13	5.40					
	velocity	7.44				9.02						7.91	7.41	8.15				
H1 lead leg L	strides	19	13	13	13	13		13	13	13	14	14	17	155				
Ottoz, Laurent (ITA) (1970)	time	6.11				21.69						43.62		49.15	2 / 6		*Sanchez (1998)*	
reaction time	interval					15.58						21.93	5.53					
	velocity	7.36				8.99						7.98	7.23	8.14				
H1 lead leg R	strides	22	14	14	14	14		14	14	15	15	15	18	169				
Muzik, Juri (CZE) (1976)	time	6.01				21.40						44.30		50.51	8 / 7		*Sanchez (1998)*	
reaction time	interval					15.39						22.90	6.21					
	velocity	7.49				9.10						7.64	6.44	7.92				
H1 lead leg R	strides	21	14	14	14	14		14	14	15	15	15	19.5	169.5				
Shiryayev, Vladislav (RUS) (1	time	5.95				21.50						44.89		50.94	1 / 8		*Sanchez (1998)*	
reaction time	interval					15.55						23.39	6.05					
	velocity	7.56				9.00						7.48	6.61	7.85				
H1 lead leg L	strides	20	13	13	13	13		13	14	14	15	15	19	162				

1998 Spanish National Championships (San Sebastián, ESP)

FINAL date 02-Aug-98

Ruiz (1998) - campeonato des españa absoluto: análisis de la carreras con villas

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Monreal, Iñigo (ESP) (1974)	time	6.00	9.99	14.04	18.19	22.47		26.95	31.27	35.78	40.41	44.99		50.49	6 / 1			
reaction time	interval		3.99	4.05	4.15	4.28		4.48	4.32	4.51	4.63	4.58	5.50			12.19	13.08	13.72
	velocity	7.50	8.77	8.64	8.43	8.18		7.81	8.10	7.76	7.56	7.64	7.27	7.92		8.61	8.03	7.65
H1 lead leg R	strides	20	13	13	13	13		13	13	13	14	14	17	156				
Herrero, Juan (ESP) (1976)	time	6.03	10.02	14.18	18.37	22.62		26.87	31.25	35.77	40.38	45.15		50.96	3 / 2			
reaction time	interval		3.99	4.16	4.19	4.25		4.25	4.38	4.52	4.61	4.77	5.81			12.34	12.88	13.90
	velocity	7.46	8.77	8.41	8.35	8.24		8.24	7.99	7.74	7.59	7.34	6.88	7.85		8.51	8.15	7.55
H1 lead leg L	strides	22	14	14	14	14		14	15	15	15	15	19	171				
Rodriguez, Iván (ESP) (1978)	time	6.10	10.22	14.34	18.52	22.90		27.32	31.89	36.58	41.41	46.24		51.65	7 / 3			
reaction time	interval		4.12	4.12	4.18	4.38		4.42	4.57	4.69	4.83	4.83	5.41			12.42	13.37	14.35
	velocity	7.38	8.50	8.50	8.37	7.99		7.92	7.66	7.46	7.25	7.25	7.39	7.74		8.45	7.85	7.32
H1 lead leg L	strides	22	14	14	14	14		14	15	15	16	15	18.5	171.5				
Pitillas, Oscar (ESP) (1971)	time	5.97	9.96	13.89	17.95	22.15		26.58	31.26	35.91	40.79	45.78		51.79	5 / 4			
reaction time	interval		3.99	3.93	4.06	4.20		4.43	4.68	4.65	4.88	4.99	6.01			11.98	13.31	14.52
	velocity	7.54	8.77	8.91	8.62	8.33		7.90	7.48	7.53	7.17	7.01	6.66	7.72		8.76	7.89	7.23
H1 lead leg L	strides	20	13	13	13	13		13	14	14	15	15	18	161				
Melero, Julio (ESP) (1972)	time	6.07	10.16	14.27	18.50	22.86		27.34	31.86	36.55	41.29	46.08		52.08	4 / 5			
reaction time	interval		4.09	4.11	4.23	4.36		4.48	4.52	4.69	4.74	4.79	6.00			12.43	13.36	14.22
	velocity	7.41	8.56	8.52	8.27	8.03		7.81	7.74	7.46	7.38	7.31	6.67	7.68		8.45	7.86	7.38
H1 lead leg R	strides	21	14	14	14	14		15	15	15	15	15	18	170				
Juan, Jaime (ESP) (1977)	time	6.22	10.26	14.35	18.57	22.96		27.51	32.00	36.51	41.27	46.19		52.40	8 / 6			
reaction time	interval		4.04	4.09	4.22	4.39		4.55	4.49	4.51	4.76	4.92	6.21			12.35	13.43	14.19

		velocity	7.23	8.66	8.56	8.29	7.97	7.69	7.80	7.76	7.35	7.11	6.44	7.63		8.50	7.82	7.40
H1 lead leg	L	strides	21	14	14	14	14	15	15	15	15	15	18.5	170.5				
López, Guillermo (ESP) (197		time	6.19	10.32	14.39	18.54	22.87	27.28	31.88	36.59	41.52	46.57		52.50	1 / 7			
reaction time		interval		4.13	4.07	4.15	4.33	4.41	4.60	4.71	4.93	5.05	5.93			12.35	13.34	14.69
		velocity	7.27	8.47	8.60	8.43	8.08	7.94	7.61	7.43	7.10	6.93	6.75	7.62		8.50	7.87	7.15
H1 lead leg	L	strides	22	15	15	15	15	15	16	16	16	16	20	181				
Salmerón, Fernando (ESP) (		time	6.18	10.27	14.57	18.74	23.20	27.72	32.28	36.79	41.74	46.72		52.75	2 / 8			
reaction time		interval		4.09	4.30	4.17	4.46	4.52	4.56	4.51	4.95	4.98	6.03			12.56	13.54	14.44
		velocity	7.28	8.56	8.14	8.39	7.85	7.74	7.68	7.76	7.07	7.03	6.63	7.58		8.36	7.75	7.27
H1 lead leg	L	strides	22	14	15	14	15	15	15	15	17	16	20	178				

Semi-Final 2

date 01-Aug-98

Ruiz (1998) - campeonato des españa absoluto: análisis de la carreras con villas

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Salmerón, Fernando (ESP) (		time	6.20	10.25	14.38	18.62	22.92		27.37	31.92	36.94	42.01	47.14		53.24	3 / ??			
reaction time		interval		4.05	4.13	4.24	4.30		4.45	4.55	5.02	5.07	5.13	6.10			12.42	13.30	15.22
		velocity	7.26	8.64	8.47	8.25	8.14		7.87	7.69	6.97	6.90	6.82	6.56	7.51		8.45	7.89	6.90
H1 lead leg	L	strides	22	14	14	14	14		15	15	16	16	16	20	176				

1997 IAAF World Championships (Athens, GRE)

FINAL

date 04-Aug-97

Hommel (1999) - biomechanical research project, athens 1997: final report

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (1		time	5.87	9.50	13.14	16.85	20.60		24.68	28.68	32.98	37.56	42.27		47.70	6 / 1			
reaction time	0.157	interval		3.63	3.64	3.71	3.75		4.08	4.00	4.30	4.58	4.71	5.43			10.98	11.83	13.59
		velocity	7.67	9.64	9.62	9.43	9.33		8.58	8.75	8.14	7.64	7.43	7.37	8.39		9.56	8.88	7.73
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	15	15	19	163				
Herbert, Llewellyn (RSA) (19		time	5.96	9.62	13.46	17.32	21.48		25.64	29.86	34.14	38.48	42.87		47.86	1 / 2			
reaction time	0.147	interval		3.66	3.84	3.86	4.16		4.16	4.22	4.28	4.34	4.39	4.99	NR		11.36	12.54	13.01
		velocity	7.55	9.56	9.11	9.07	8.41		8.41	8.29	8.18	8.06	7.97	8.02	8.36		9.24	8.37	8.07
H1 lead leg		strides																	
Bronson, Bryan (USA) (1972		time	6.03	9.66	13.32	17.08	20.95		25.08	29.28	33.62	38.08	42.62		47.88	3 / 3			
reaction time	0.247	interval		3.63	3.66	3.76	3.87		4.13	4.20	4.34	4.46	4.54	5.26			11.05	12.20	13.34
		velocity	7.46	9.64	9.56	9.31	9.04		8.47	8.33	8.06	7.85	7.71	7.60	8.35		9.50	8.61	7.87
H1 lead leg		strides																	
Mori, Fabrizio (ITA) (1969)		time	6.14	10.02	13.78	17.72	21.72		25.85	30.04	34.40	38.78	43.18		48.05	4 / 4			
reaction time	0.156	interval		3.88	3.76	3.94	4.00		4.13	4.19	4.36	4.38	4.40	4.87	NR		11.58	12.32	13.14
		velocity	7.33	9.02	9.31	8.88	8.75		8.47	8.35	8.03	7.99	7.95	8.21	8.32		9.07	8.52	7.99
H1 lead leg		strides																	
Matete, Samuel (ZAM) (1968		time	5.98	9.66	13.41	17.24	21.16		25.18	29.20	33.62	38.10	42.70		48.11	8 / 5			
reaction time	0.237	interval		3.68	3.75	3.83	3.92		4.02	4.02	4.42	4.48	4.60	5.41			11.26	11.96	13.50
		velocity	7.53	9.51	9.33	9.14	8.93		8.71	8.71	7.92	7.81	7.61	7.39	8.31		9.33	8.78	7.78
H1 lead leg		strides																	
Mashchenko, Ruslan (RUS)		time	5.88	9.60	13.36	17.16	21.02		25.02	29.30	33.61	38.26	43.06		48.62	5 / 6			
reaction time	0.166	interval		3.72	3.76	3.80	3.86		4.00	4.28	4.31	4.65	4.80	5.56			11.28	12.14	13.76
		velocity	7.65	9.41	9.31	9.21	9.07		8.75	8.18	8.12	7.53	7.29	7.19	8.23		9.31	8.65	7.63
H1 lead leg		strides																	
Morgan, Dinsdale (JAM) (19		time	5.96	9.68	13.52	17.45	21.48		25.56	29.86	34.32	38.96	43.70		49.06	7 / 7			
reaction time	0.152	interval		3.72	3.84	3.93	4.03		4.08	4.30	4.46	4.64	4.74	5.36			11.49	12.41	13.84
		velocity	7.55	9.41	9.11	8.91	8.68		8.58	8.14	7.85	7.54	7.38	7.46	8.15		9.14	8.46	7.59
H1 lead leg		strides																	
Mužík, Jiri (CZE) (1976)		time	6.02	9.78	13.62	17.58	21.80		26.12	30.42	34.92	39.52	44.14		49.51	2 / 8			
reaction time	0.179	interval		3.76	3.84	3.96	4.22		4.32	4.30	4.50	4.60	4.62	5.37	NR		11.56	12.84	13.72
		velocity	7.48	9.31	9.11	8.84	8.29		8.10	8.14	7.78	7.61	7.58	7.45	8.08		9.08	8.18	7.65
H1 lead leg		strides																	

1997 European Cup (Munich, GER)

FINAL

date 21-Jun-97

Jung (2003) - http://www.fgs.uni-halle.de

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mori, Fabrizio (ITA) (1969)		time	6.22	10.15	14.12	18.24	22.36		26.67	31.00	35.34	39.71	44.11		48.93	/ 1			
reaction time		interval		3.93	3.97	4.12	4.12		4.31	4.33	4.34	4.37	4.40	4.82			12.02	12.76	13.11
		velocity	7.23	8.91	8.82	8.50	8.50		8.12	8.08	8.06	8.01	7.95	8.30	8.17		8.74	8.23	8.01
H1 lead leg		strides																	
Diagana, Stéphane (FRA) (1		time	6.03	9.80	13.72	17.60	21.60		25.70	30.19	34.74	39.28	43.92		49.19	/ 2			
reaction time		interval		3.77	3.92	3.88	4.00		4.10	4.49	4.55	4.54	4.64	5.27			11.57	12.59	13.73
		velocity	7.46	9.28	8.93	9.02	8.75		8.54	7.80	7.69	7.71	7.54	7.59	8.13		9.08	8.34	7.65
H1 lead leg		strides																	
Mashchenko, Ruslan (RUS)		time	6.05	9.79	13.70	17.72	21.84		26.06	30.47	34.94	39.60	44.33		49.74	/ 3			
reaction time		interval		3.74	3.91	4.02	4.12		4.22	4.41	4.47	4.66	4.73	5.41			11.67	12.75	13.86
		velocity	7.44	9.36	8.95	8.71	8.50		8.29	7.94	7.83	7.51	7.40	7.39	8.04		9.00	8.24	7.58

H1 lead leg	strides																	
Pitillas, Oscar (ESP) (1971)	time	6.28	10.21	14.18	18.24	22.35	26.66	31.20	35.98	40.54	45.46		51.05	/ 4			
reaction time	interval		3.93	3.97	4.06	4.11	4.31	4.54	4.78	4.56	4.92	5.59			11.96	12.96	14.26
	velocity	7.17	8.91	8.82	8.62	8.52	8.12	7.71	7.32	7.68	7.11	7.16	7.84		8.78	8.10	7.36
H1 lead leg	strides																	
Rawlinson, Christopher (GB	time	6.12	9.92	13.86	17.90	22.12	26.50	31.07	35.80	40.62	45.62		51.06	/ 5			
reaction time	interval		3.80	3.94	4.04	4.22	4.38	4.57	4.73	4.82	5.00	5.44			11.78	13.17	14.55
	velocity	7.35	9.21	8.88	8.66	8.29	7.99	7.66	7.40	7.26	7.00	7.35	7.83		8.91	7.97	7.22
H1 lead leg	strides																	
Moumoulídis, Konstadínos (	time	6.22	10.13	14.10	18.19	22.42	26.81	31.29	36.04	41.03	46.20		52.01	/ 6			
reaction time	interval		3.91	3.97	4.09	4.23	4.39	4.48	4.75	4.99	5.17	5.81			11.97	13.10	14.91
	velocity	7.23	8.95	8.82	8.56	8.27	7.97	7.81	7.37	7.01	6.77	6.88	7.69		8.77	8.02	7.04
H1 lead leg	strides																	
Lunn, Atle (NOR) (1969)	time	6.30	10.24	14.29	18.56	22.98	27.62	32.47	36.40	42.56	47.94		54.09	/ 7			
reaction time	interval		3.94	4.05	4.27	4.42	4.64	4.85	3.93	6.16	5.38	6.15			12.26	13.91	15.47
	velocity	7.14	8.88	8.64	8.20	7.92	7.54	7.22	8.91	5.68	6.51	6.50	7.40		8.56	7.55	6.79
H1 lead leg	strides																	
Ehrnsprenger, Klaus (GER) (	time	6.56	10.77	15.15	19.62	24.23	28.92	33.77	38.71	43.99	49.46		55.13	/ 8			
reaction time	interval		4.21	4.38	4.47	4.61	4.69	4.85	4.94	5.28	5.47	5.67			13.06	14.15	15.69
	velocity	6.86	8.31	7.99	7.83	7.59	7.46	7.22	7.09	6.63	6.40	7.05	7.26		8.04	7.42	6.69
H1 lead leg	strides																	

1996 ???? (Hiroshima, JPN)

FINAL date 14-Aug-96

Kishima (2022) - national high school championships biomechanics data collection

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tamesue, Dai (JPN) (1978)	time	6.18	9.92	13.76	17.63	21.63		25.87	30.14	34.71	39.31	43.95		49.09	/ 1			
reaction time	interval		3.74	3.84	3.87	4.00		4.24	4.27	4.57	4.60	4.64	5.14	PB		11.45	12.51	13.81
	velocity	7.28	9.36	9.11	9.04	8.75		8.25	8.20	7.66	7.61	7.54	7.78	8.15		9.17	8.39	7.60
H1 lead leg	strides		13	13	13	13		14	14	15	15	15		125				

1996 Olympic Games (Atlanta, GA)

Behm (1996) - 400m haies

FINAL date 01-Aug-96

McFarlane (2000) - the science of hurdling and speed

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Adkins, Derrick (USA) (1970)	time	5.83	9.59	13.40	17.16	21.12		25.12	29.21	33.44	37.74	42.25		47.54	6 / 1		*McFarlane (2000)*	
reaction time 0.294	interval		3.76	3.81	3.76	3.96		4.00	4.09	4.23	4.30	4.51	5.29	=PB		11.33	12.05	13.04
	velocity	7.72	9.31	9.19	9.31	8.84		8.75	8.56	8.27	8.14	7.76	7.56	8.41		9.27	8.71	8.05
H1 lead leg	strides	20	13	13	13	13		13	14	14	14	14		141				
Matete, Samuel (ZAM) (1968)	time	5.84	9.61	13.43	17.29	21.24		25.22	29.30	33.44	37.74	42.25		47.78	1 / 2		*McFarlane (2000)*	
reaction time 0.184	interval		3.77	3.82	3.86	3.95		3.98	4.08	4.14	4.30	4.51	5.53			11.45	12.01	12.95
	velocity	7.71	9.28	9.16	9.07	8.86		8.79	8.58	8.45	8.14	7.76	7.23	8.37		9.17	8.74	8.11
H1 lead leg	strides	20	13	13	13	13		13	13	13	15	15		141				
Davis, Calvin (USA) (1972)	time	6.02	9.85	13.62	17.38	21.34		25.48	29.70	33.90	38.35	42.82		47.96	5 / 3		*McFarlane (2000)*	
reaction time 0.267	interval		3.83	3.77	3.76	3.96		4.14	4.22	4.20	4.45	4.47	5.14			11.36	12.32	13.12
	velocity	7.48	9.14	9.28	9.31	8.84		8.45	8.29	8.33	7.87	7.83	7.78	8.34		9.24	8.52	8.00
H1 lead leg	strides	23	15	15	15	15		15	15	15	15	15		158				
Nylander, Sven (SWE) (1962)	time	6.0	9.7	13.5	17.3	21.3		25.3	29.4	33.8	38.3	42.9		47.98	4 / 4		*Behm (1996)*	
reaction time 0.225	interval		3.7	3.8	3.8	4.0		4.0	4.1	4.4	4.5	4.6	5.08	NR		11.30	12.10	13.50
	velocity	7.50	9.46	9.21	9.21	8.75		8.75	8.54	7.95	7.78	7.61	7.87	8.34		9.29	8.68	7.78
H1 lead leg	strides	20	13	13	13	13		13	13	13	14	14		139				
Robinson, Rohan (AUS) (19	time	6.0	9.7	13.5	17.3	21.3		25.3	29.5	33.8	38.3	43.0		48.30	8 / 5		*Behm (1996)*	
reaction time 0.283	interval		3.7	3.8	3.8	4.0		4.0	4.2	4.3	4.5	4.7	5.30			11.30	12.20	13.50
	velocity	7.50	9.46	9.21	9.21	8.75		8.75	8.33	8.14	7.78	7.45	7.55	8.28		9.29	8.61	7.78
H1 lead leg	strides	21	14	14	14	14		14	14	15	15	15		150				
Mori, Fabrizio (ITA) (1969)	time	6.0	10.0	14.0	17.9	21.9		26.0	30.1	34.4	38.8	43.4		48.41	7 / 6		*Behm (1996)*	
reaction time 0.192	interval		4.0	4.0	3.9	4.0		4.1	4.1	4.3	4.4	4.6	5.01			11.90	12.20	13.30
	velocity	7.50	8.75	8.75	8.97	8.75		8.54	8.54	8.14	7.95	7.61	7.98	8.26		8.82	8.61	7.89
H1 lead leg	strides	21	14	14	14	14		14	14	15	15	15		150				
Teixeira, Everson (BRA) (197	time	6.0	10.0	13.8	17.6	21.6		25.8	30.2	34.4	38.8	43.5		48.57	3 / 7		*Behm (1996)*	
reaction time 0.201	interval		4.0	3.8	3.8	4.0		4.2	4.4	4.2	4.4	4.7	5.07			11.60	12.60	13.30
	velocity	7.50	8.75	9.21	9.21	8.75		8.33	7.95	8.33	7.95	7.45	7.89	8.24		9.05	8.33	7.89
H1 lead leg	strides	20	13	13	13	13		13	13	13	13	13		137				
de Araújo, Eronildo (BRA) (	time	6.0	9.9	13.7	17.5	21.4		25.5	29.7	34.0	38.4	43.0		48.78	2 / 8		*Behm (1996)*	
reaction time 0.199	interval		3.9	3.8	3.8	3.9		4.1	4.2	4.3	4.4	4.6	5.78			11.50	12.20	13.30
	velocity	7.50	8.97	9.21	9.21	8.97		8.54	8.33	8.14	7.95	7.61	6.92	8.20		9.13	8.61	7.89
H1 lead leg	strides	21	13	13	13	13		13	14	14	14	14		142				

1996 French National Championships (Evry, FRA)

FINAL

date ??

Veney - split times from PJ

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mbaye, Amadou (SEN) (1964		time	6.1	9.9	13.9	18.0	22.0		26.2	30.5	35.0	39.6	44.5		50.30	/ 2			
reaction time		interval		3.8	4.0	4.1	4.0		4.2	4.3	4.5	4.6	4.9	5.80			11.90	12.50	14.00
		velocity	7.38	9.21	8.75	8.54	8.75		8.33	8.14	7.78	7.61	7.14	6.90	7.95		8.82	8.40	7.50
H1 lead leg		strides	20	13	13	13	13		13	14	14	14	14		141				

1996 USA Olympic Trials (Atlanta, GA)

FINAL

date 16-Jun-96

McNichols (2000) - Hurdle technique study through video analysis

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Bronson, Bryan (USA) (1972		time	6.01	9.69	13.37	17.03	20.97	22.78	25.23	29.39	33.67	38.11	42.67		47.98	8 / 1			
reaction time		interval		3.68	3.68	3.66	3.94		4.26	4.16	4.28	4.44	4.56	5.31	PB		11.02	12.36	13.28
		velocity	7.49	9.51	9.51	9.56	8.88	8.78	8.22	8.41	8.18	7.88	7.68	7.53	8.34		9.53	8.50	7.91
H1 lead leg	R	strides	21	13	13	13	13		15	15	15	15	15		148				
Adkins, Derrick (USA) (1970)		time	5.77	9.45	13.17	16.88	20.76	21.43	24.82	29.07	33.47	37.98	42.65		48.18	5 / 2			
reaction time		interval		3.68	3.72	3.71	3.88		4.06	4.25	4.40	4.51	4.67	5.53			11.11	12.19	13.58
		velocity	7.80	9.51	9.41	9.43	9.02	9.33	8.62	8.24	7.95	7.76	7.49	7.23	8.30		9.45	8.61	7.73
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14		141				
Davis, Calvin (USA) (1972)		time	6.03	9.88	13.71	17.65	21.60	22.28	25.67	29.98	34.23	38.68	43.21		48.32	3 / 3			
reaction time		interval		3.85	3.83	3.94	3.95		4.07	4.31	4.25	4.45	4.53	5.11	PB		11.62	12.33	13.23
		velocity	7.46	9.09	9.14	8.88	8.86	8.98	8.60	8.12	8.24	7.87	7.73	7.83	8.28		9.04	8.52	7.94
H1 lead leg	R	strides	23	13	14	14	14		14	14	15	15	15		151				
Thomas, Eric (USA) (1973)		time	5.98	9.83	13.67	17.53	21.47	22.18	25.41	29.59	33.90	38.39	43.09		48.54	4 / 4			
reaction time		interval		3.85	3.84	3.86	3.94		3.94	4.18	4.31	4.49	4.70	5.45	=PB		11.55	12.06	13.50
		velocity	7.53	9.09	9.11	9.07	8.88	9.02	8.88	8.37	8.12	7.80	7.45	7.34	8.24		9.09	8.71	7.78
H1 lead leg	R	strides	20	13	13	14	13		13	14	14	15	15		144				
Zellner, Torrance (USA) (197		time	5.81	9.63	13.49	17.35	21.37	22.99	25.60	29.95	34.27	38.67	43.25		48.65	7 / 5			
reaction time		interval		3.82	3.86	3.86	4.02		4.23	4.35	4.32	4.40	4.58	5.40			11.54	12.60	13.30
		velocity	7.75	9.16	9.07	9.07	8.71	8.70	8.27	8.05	8.10	7.95	7.64	7.41	8.22		9.10	8.33	7.89
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	14		138				
Flenoy, Stefan (USA) (1968)		time	5.86	9.61	13.38	17.21	21.08	21.75	25.17	29.43	33.96	38.51	43.18		48.74	6 / 6			
reaction time		interval		3.75	3.77	3.83	3.87		4.09	4.26	4.53	4.55	4.67	5.56			11.35	12.22	13.75
		velocity	7.68	9.33	9.28	9.14	9.04	9.20	8.56	8.22	7.73	7.69	7.49	7.19	8.21		9.25	8.59	7.64
H1 lead leg	L	strides	21	13	13	13	13		13	13	14	14	14		141				
Woody, Joey (USA) (1973)		time	6.08	9.82	13.68	17.60	21.58	22.29	25.72	29.99	34.36	38.76	43.52		48.96	2 / 7			
reaction time		interval		3.74	3.86	3.92	3.98		4.14	4.27	4.37	4.40	4.76	5.44			11.52	12.39	13.53
		velocity	7.40	9.36	9.07	8.93	8.79	8.97	8.45	8.20	8.01	7.95	7.35	7.35	8.17		9.11	8.47	7.76
H1 lead leg	R	strides	21	13	13	13	13		13	14	14	14	15		143				
Porter, Will (USA) (1973)		time	6.01	9.93	13.91	17.91	22.01	23.80	26.23	30.59	34.93	39.39	43.94		49.49	1 / 8			
reaction time		interval		3.92	3.98	4.00	4.10		4.22	4.36	4.34	4.46	4.55	5.55			11.90	12.68	13.35
		velocity	7.49	8.93	8.79	8.75	8.54	8.40	8.29	8.03	8.06	7.85	7.69	7.21	8.08		8.82	8.28	7.87
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	14		138				

Semi-Final 1

date 15-Jun-96

Lyle - miscellaneous coaching notes

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Adkins, Derrick (USA) (1970)		time	5.51	9.32	13.24	17.09	21.11		25.18	29.42	33.96	38.44	42.81		48.33	/ 1			
reaction time		interval		3.81	3.92	3.85	4.02		4.07	4.24	4.54	4.48	4.37	5.52			11.58	12.33	13.39
		velocity	8.17	9.19	8.93	9.09	8.71		8.60	8.25	7.71	7.81	8.01	7.25	8.28		9.07	8.52	7.84
H1 lead leg		strides																	

Heat 2

date 14-Jun-96

Lyle - miscellaneous coaching notes

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Young, Kevin (USA) (1966)		time	5.72	9.92	13.46	17.34	21.27		25.47	29.73	34.09	38.57	43.27		49.15	/ 3			
reaction time		interval		4.20	3.54	3.88	3.93		4.20	4.26	4.36	4.48	4.70	5.88			11.62	12.39	13.54
		velocity	7.87	8.33	9.89	9.02	8.91		8.33	8.22	8.03	7.81	7.45	6.80	8.14		9.04	8.47	7.75
H1 lead leg		strides																	

1995 IAAF World Championships (Göteborg, SWE)

FINAL

date 10-Aug-95

Behm (1999) - Les chiffres: Les podiums de tous le championnats

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Adkins, Derrick (USA (1970)		time					20.8								47.98	4 / 1			
reaction time		interval																	
		velocity					8.89								8.34				
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	18.7	159.7				
Matete, Samuel (ZAM) (1968		time					21.0								48.03	3 / 2			
reaction time		interval																	
		velocity					8.81								8.33				
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	15	15	18.5	159.5				
Diagana, Stéphane (FRA) (1		time					21.1								48.14	6 / 3			
reaction time		interval																	

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		velocity					8.77								8.31	
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	15	15	19.2	162.2	

Mashchenko, Ruslan (RUS) (1971)	no information available	48.83	7 / 4
Nylander, Sven (SWE) (1962)	no information available	48.84	5 / 5
Harnden, Ken (ZIM) (1973)	no information available	48.89	2 / 6
Yamazaki, Kazuhiko (JPN) (1971)	no information available	49.22	8 / 7
de Araújo, Eronilde (BRA) (1970)	no information available	49.86	1 / 8

1995 Athletissima (Luasanne, SUI)

FINAL date 05-Jul-95

Behm (1999) - Les deux recordmen de France: Stéphane Diagana (Vazel)

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Diagana, Stéphane (FRA) (1!	time	5.86	9.54	13.30	17.10	20.97		24.94	29.09	33.25	37.67	42.16		47.37	/ 1			
reaction time	interval		3.68	3.76	3.80	3.87		3.97	4.15	4.16	4.42	4.49	5.21	AR / PB		11.24	11.99	13.07
	velocity	7.68	9.51	9.31	9.21	9.04		8.82	8.43	8.41	7.92	7.80	7.68	8.44		9.34	8.76	8.03
H1 lead leg	strides		13	13	13	13		13	14	14	15	15		123				

1994 European Championships (Helsinki, FIN)

FINAL date 10-Aug-94

Behm (1995) - la tactique du 400 haies

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tverdokhleb, Oleg (UKR) (1!	time	5.9	9.6	13.4	17.3	21.2		25.3	29.3	33.6	38.0	42.6		48.06	/ 1			
reaction time	interval		3.7	3.8	3.9	3.9		4.1	4.0	4.3	4.4	4.6	5.46	NR		11.40	12.00	13.30
	velocity	7.63	9.46	9.21	8.97	8.97		8.54	8.75	8.14	7.95	7.61	7.33	8.32		9.21	8.75	7.89
H1 lead leg	strides	20	13	13	13	13		13	13	15	15	15		143				
Nylander, Sven (SWE) (1962)	time	5.9	9.5	13.3	17.2	21.1		25.3	29.3	33.6	38.2	42.8		48.22	/ 2			
reaction time	interval		3.6	3.8	3.9	3.9		4.2	4.0	4.3	4.6	4.6	5.42	PB		11.30	12.10	13.50
	velocity	7.63	9.72	9.21	8.97	8.97		8.33	8.75	8.14	7.61	7.61	7.38	8.30		9.29	8.68	7.78
H1 lead leg	strides	20	13	13	13	13		14	14	14	14	14		142				
Diagana, Stéphane (FRA) (1!	time	5.9	9.5	13.2	16.9	20.8		24.7	29.0	33.3	37.9	42.6		48.23	/ 3			
reaction time	interval		3.6	3.7	3.7	3.9		3.9	4.3	4.3	4.6	4.7	5.63			11.00	12.10	13.60
	velocity	7.63	9.72	9.46	9.46	8.97		8.97	8.14	8.14	7.61	7.45	7.10	8.29		9.55	8.68	7.72
H1 lead leg	strides	20	13	13	13	13		13	14	14	15	15		143				

Rodrigues, Pedro (POR) (1971)	no information available	NR	48.77	/ 4
Itt, Edgar (GER) (1967)	no information available		49.11	/ 5
Crampton, Peter (GBR) (1969)	no information available		49.45	/ 6
Zadoynov, Vadim (MDA) (1969)	no information available		49.50	/ 7
Cadogan, Gary (GBR) (1966)	no information available		49.53	/ 8

1993 Pesaro, ITA

FINAL date 10-Oct-93

Partipilo (1994) - la distribuzione dello sforzo nei 400m ad ostacoli

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Franca, Matteo (ITA)	time	6.80	11.19	15.49	20.08	24.85	26.9	29.77	34.58	39.63	44.83	50.17		56.10	???			
reaction time	interval		4.39	4.30	4.59	4.77		4.92	4.81	5.05	5.20	5.34	5.93	PB		13.28	14.50	15.59
	velocity	6.62	7.97	8.14	7.63	7.34	7.43	7.11	7.28	6.93	6.73	6.55	6.75	7.13		7.91	7.24	6.74
H1 lead leg	strides	23	15	15	15	17		17	17	17	17	17		170				

1993 Bergamo, ITA

FINAL date 03-Oct-93

Partipilo (1994) - la distribuzione dello sforzo nei 400m ad ostacoli

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Gianessi, Paolo (ITA)	time	6.49	10.73	14.96	19.38	23.81	25.8	28.51	33.37	38.35	43.81	49.17		55.47	???			
reaction time	interval		4.24	4.23	4.42	4.43		4.70	4.86	4.98	5.46	5.36	6.30			12.89	13.99	15.80
	velocity	6.93	8.25	8.27	7.92	7.90	7.75	7.45	7.20	7.03	6.41	6.53	6.35	7.21		8.15	7.51	6.65
H1 lead leg	strides	22	15	15	15	15		15	15	15	16	16		159				

1993 Bologna, ITA

FINAL date 09-Sep-93

Partipilo (1994) - la distribuzione dello sforzo nei 400m ad ostacoli

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Franca, Matteo (ITA)	time	6.87	11.55	16.16	20.91	25.96	28.1	31.07	36.30	41.43	46.53	51.83		57.40	???			
reaction time	interval		4.68	4.61	4.75	5.05		5.11	5.23	5.13	5.10	5.30	5.57			14.04	15.39	15.53
	velocity	6.55	7.48	7.59	7.37	6.93	7.12	6.85	6.69	6.82	6.86	6.60	7.18	6.97		7.48	6.82	6.76
H1 lead leg	strides	23	15	15	15	15		16	16	17	17	17		166				

1993 Urbino, ITA

FINAL date 08-Sep-93

Partipilo (1994) - la distribuzione dello sforzo nei 400m ad ostacoli

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Gianessi, Paolo (ITA)	time	6.7	11.1	15.6	21.2	24.8	26.9	29.4	34.3	39.2	44.2	49.4		55.2	???			
reaction time	interval		4.4	4.5	5.6	3.6		4.6	4.9	4.9	5.0	5.2	5.8			14.50	13.10	15.10
	velocity	6.72	7.95	7.78	6.25	9.72	7.43	7.61	7.14	7.14	7.00	6.73	6.90	7.25		7.24	8.02	6.95
H1 lead leg	strides	22	15	15	15	15		15	15	15	15	15		157				

1993 IAAF World Championships (Stuttgart, GER)

FINAL date 19-Aug-93

Graubner (2008) - http://www.fgs.uni-halle.de

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Young, Kevin (USA) (1966)	time	6.05	9.68	13.43	17.12	20.92		24.86	28.89	33.00	37.34	41.46		47.18	6 / 1			

reaction time	0.267	interval		3.63	3.75	3.69	3.80	3.94	4.03	4.11	4.34	4.12	5.72			11.07	11.77	12.57
		velocity	7.44	9.64	9.33	9.49	9.21	8.88	8.68	8.52	8.06	8.50	6.99	8.48		9.49	8.92	8.35
H1 lead leg	L	strides	20	13	13	12	12	13	13	13	13	13	17	152				
Matete, Samuel (ZAM) (1968)		time	5.96	9.67	13.42	17.26	21.20	25.16	29.30	33.64	38.13	42.63		47.60	3 / 2			
reaction time	0.265	interval		3.71	3.75	3.84	3.94	3.96	4.14	4.34	4.49	4.50	4.97			11.30	12.04	13.33
		velocity	7.55	9.43	9.33	9.11	8.88	8.84	8.45	8.06	7.80	7.78	8.05	8.40		9.29	8.72	7.88
H1 lead leg	L	strides	21	13	13		13	13	13			15	18	119				
Graham, Winthrop (JAM) (1!		time	5.92	9.63	13.43	17.26	21.18	25.07	29.10	33.44	37.77	42.33		47.62	5 / 3			
reaction time	0.213	interval		3.71	3.80	3.83	3.92	3.89	4.03	4.34	4.33	4.56	5.29			11.34	11.84	13.23
		velocity	7.60	9.43	9.21	9.14	8.93	9.00	8.68	8.06	8.08	7.68	7.56	8.40		9.26	8.87	7.94
H1 lead leg	L	strides	20	13	13		13	13	13	14	14	15	18	146				
Diagana, Stéphane (FRA) (1!		time	5.87	9.42	13.10	16.89	20.74	24.74	28.91	33.18	37.66	42.26		47.64	7 / 4			
reaction time	0.206	interval		3.55	3.68	3.79	3.85	4.00	4.17	4.27	4.48	4.60	5.38	PB		11.02	12.02	13.35
		velocity	7.67	9.86	9.51	9.23	9.09	8.75	8.39	8.20	7.81	7.61	7.43	8.40		9.53	8.74	7.87
H1 lead leg	L	strides	20	13	13		13	13	14	14	15	15	19	149				
Keter, Erick (KEN) (966)			no information available											48.40	4 / 5			
Tverdokhleb, Oleg (UKR) (1969)			no information available											48.71	2 / 6			
Adkins, Derrick (USA) (1970)			no information available											49.07	8 / 7			
Kinyor, Barnabas (KEN) (1961)			no information available											49.23	1 / 8			

Semi-Final 3

date 17-Aug-93

Letzelter (1995) - schrittgestaltung im 400m-hürdenlauf der jugend

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Young, Kevin (USA) (1966)		time	5.92	9.64	13.42	17.18	20.98		25.04	29.16	33.48	37.86	42.40		47.99	3 / 1			
reaction time		interval		3.72	3.78	3.76	3.80		4.06	4.12	4.32	4.38	4.54	5.59			11.26	11.98	13.24
		velocity	7.60	9.41	9.26	9.31	9.21		8.62	8.50	8.10	7.99	7.71	7.16	8.34		9.33	8.76	7.93
H1 lead leg	L	strides	20	13	13	12	12		13	13	13	13	13	16	151				

Semi-Final 2

date 17-Aug-93

Letzelter (1995) - schrittgestaltung im 400m-hürdenlauf der jugend

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Matete, Samuel (ZAM) (1968)		time	5.74	9.44	13.18	16.96	20.82		24.78	28.96	33.46	38.12	42.74		48.18	3 / 1			
reaction time		interval		3.70	3.74	3.78	3.86		3.96	4.18	4.50	4.66	4.62	5.44			11.22	12.00	13.78
		velocity	7.84	9.46	9.36	9.26	9.07		8.84	8.37	7.78	7.51	7.58	7.35	8.30		9.36	8.75	7.62
H1 lead leg	L	strides	21	13	13	13	13		13	13	15	15	15	17.5	161.5				

1993 Bologna, ITA

FINAL

date 01-Jul-93

Partipilo (1994) - la distribuzione dello sforzo nei 400m ad ostacoli

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Franca, Matteo (ITA)		time	6.79	11.17	15.71	20.31	25.36	27.5	30.34	35.41	40.57	46.09	51.40		57.40	???			
reaction time		interval		4.38	4.54	4.60	5.05		4.98	5.07	5.16	5.52	5.31	6.00			13.52	15.10	15.99
		velocity	6.63	7.99	7.71	7.61	6.93	7.27	7.03	6.90	6.78	6.34	6.59	6.67	6.97		7.77	6.95	6.57
H1 lead leg		strides	23	15	15	15	15		17	17	17	17	17		168				

Belloc (1992) - Diagana: 45.18 / 48.13 : 3" d'ecart; incompressibles?

1992 Olympic Games (Barcelona, ESP)

Knight (1992) - 1992 Olympic report: the hurdling events

FINAL

date 06-Aug-92

Letzelter (1995) - schrittgestaltung im 400m-hürdenlauf der jugend

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Young, Kevin (USA) (1966)		time	5.92	9.58	13.24	16.94	20.72		24.68	28.74	32.88	37.18	41.58		46.78	4 / 1		*Letzelter (1995)*	
reaction time		interval		3.66	3.66	3.70	3.78		3.96	4.06	4.14	4.30	4.40	5.20	WR		11.02	11.80	12.84
		velocity	7.60	9.56	9.56	9.46	9.26		8.84	8.62	8.45	8.14	7.95	7.69	8.55		9.53	8.90	8.18
H1 lead leg	L	strides	20	13	13	12	12		13	13	13	13	13	16.7	151.7				
Graham, Winthrop (JAM) (1!		time	5.9	9.5	13.3	17.1	20.9		24.9	29.1	33.3	37.8	42.4		47.66	3 / 2		*Knight (1992)*	
reaction time		interval		3.60	3.80	3.80	3.80		4.00	4.20	4.20	4.50	4.60	5.26			11.20	12.00	13.30
		velocity	7.63	9.72	9.21	9.21	9.21		8.75	8.33	8.33	7.78	7.61	7.60	8.39		9.38	8.75	7.89
H1 lead leg	L	strides	20	13	13	13	13		13	13	14	14	15	17.7	158.7				
Akabusi, Kriss (GBR) (1958)		time	6.0	9.7	13.6	17.4	21.3	23.1	25.4	29.5	33.8	38.2	42.7		47.82	5 / 3	*Arnold (1992) - Hurdling*		
reaction time		interval		3.70	3.90	3.80	3.90		4.10	4.10	4.30	4.40	4.50	5.12	NR		11.40	12.10	13.20
		velocity	7.50	9.46	8.97	9.21	8.97	8.66	8.54	8.54	8.14	7.95	7.78	7.81	8.36		9.21	8.68	7.95
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	15	18	159				
Diagana, Stéphane (FRA) (1!		time	5.90	9.60	13.35	17.15	21.00		25.20	29.40	33.65	38.05	42.70		48.13	6 / 4		*Belloc (1992)*	
reaction time		interval		3.70	3.75	3.80	3.85		4.20	4.20	4.25	4.40	4.65	5.43	PB		11.25	12.25	13.30
		velocity	7.63	9.46	9.33	9.21	9.09		8.33	8.33	8.24	7.95	7.53	7.37	8.31		9.33	8.57	7.89
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18.3	164.3				
Wallenlind, Niklas (SWE) (1968)			no information available												48.63	8 / 5			
Tverdokhlib, Oleh (EUN) (1969)			no information available												48.63	2 / 6			
Caristan, Stéphane (FRA) (1		time	5.90	9.75	13.60	17.50	21.45		25.75	30.00	34.40	38.95	43.50		48.86	1 / 7		*Belloc (1992)*	
reaction time		interval		3.85	3.85	3.90	3.95		4.30	4.25	4.40	4.55	4.55	5.36	PB		11.60	12.50	13.50
		velocity	7.63	9.09	9.09	8.97	8.86		8.14	8.24	7.95	7.69	7.69	7.46	8.19		9.05	8.40	7.78
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	18.1	164.1				
Patrick, David (USA) (1960)			no information available												49.26	7 / 8			

1992 French National Championships (Narbonne, FRA)

FINAL date 28-Jun-92

Veney - split times from PJ

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Traversini, Stéphane (FRA) (	time	6.48	10.48	14.64	18.84	23.06		27.44	31.82	36.26	40.80	45.50		50.96	/ 2			
reaction time	interval		4.00	4.16	4.20	4.22		4.38	4.38	4.44	4.54	4.70	5.46			12.36	12.98	13.68
	velocity	6.94	8.75	8.41	8.33	8.29		7.99	7.99	7.88	7.71	7.45	7.33	7.85		8.50	8.09	7.68
H1 lead leg	strides	21	14	14	14	14		15	15	15	15	15	17.8	169.8				
Aberkan, Saïd (MOR) (1963)	time	6.44	10.38	14.32	18.36	22.42		26.64	31.04	35.56	40.22	45.36		51.27	/ 3			
reaction time	interval		3.94	3.94	4.04	4.06		4.22	4.40	4.52	4.66	5.14	5.91			11.92	12.68	14.32
	velocity	6.99	8.88	8.88	8.66	8.62		8.29	7.95	7.74	7.51	6.81	6.77	7.80		8.81	8.28	7.33
H1 lead leg	strides	21	14	14	14	14		14	15	15	15	16	19.3	171.3				

1992 Corridonia, ITA

FINAL date 31-May-92

Partipilo (1994) - la distribuzione dello sforzo nei 400m ad ostacoli

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Gianessi, Paolo (ITA)	time	6.84	11.47	16.18	20.93	25.67	27.7	30.50	35.51	40.51	45.63	50.80		56.70	???			
reaction time	interval		4.63	4.71	4.75	4.74		4.83	5.01	5.00	5.12	5.17	5.90			14.09	14.58	15.29
	velocity	6.58	7.56	7.43	7.37	7.38	7.22	7.25	6.99	7.00	6.84	6.77	6.78	7.05		7.45	7.20	6.87
H1 lead leg	strides	22	15	15	15	15		15	15	15	15	15		157				

1991 IAAF World Championships (Tokyo, JPN)

FINAL date 27-Aug-91

Behm (1995) - la tactique du 400 haies

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Matete, Samuel (ZAM) (1968	time	5.8	9.4	13.1	16.7	20.4		24.3	28.5	32.8	37.4	42.1		47.64	6 / 1			
reaction time	interval		3.6	3.7	3.6	3.7		3.9	4.2	4.3	4.6	4.7	5.54			10.90	11.80	13.60
	velocity	7.76	9.72	9.46	9.72	9.46		8.97	8.33	8.14	7.61	7.45	7.22	8.40		9.63	8.90	7.72
H1 lead leg L	strides	20	13	13	13	13		13	13	15	15	15	18.5	161.5				
Graham, Winthrop (JAM) (1!	time	5.9	9.5	13.2	16.8	20.4		24.3	28.6	33.0	37.5	42.1		47.74	5 / 2			
reaction time	interval		3.6	3.7	3.6	3.6		3.9	4.3	4.4	4.5	4.6	5.64	NR		10.90	11.80	13.50
	velocity	7.63	9.72	9.46	9.72	9.72		8.97	8.14	7.95	7.78	7.61	7.09	8.38		9.63	8.90	7.78
H1 lead leg L	strides	20	13	13	13	13		13	13	14	14	15	18.5	159.5				
Akabusi, Kriss (GBR) (1958)	time	6.0	9.7	13.4	17.2	21.1		25.1	29.1	33.4	37.8	42.3		47.86	4 / 3			
reaction time	interval		3.7	3.7	3.8	3.9		4.0	4.0	4.3	4.4	4.5	5.56	NR		11.20	11.90	13.20
	velocity	7.50	9.46	9.46	9.21	8.97		8.75	8.75	8.14	7.95	7.78	7.19	8.36		9.38	8.82	7.95
H1 lead leg R	strides	21	13	13	13	13		13	13	14	14	14	19	160				
Young, Kevin (USA) (1966)		no information available												48.01	7 / 4			
Harris, Danny (USA) (1965)		no information available												48.46	3 / 5			
Adkins, Derrick (USA) (1970)		no information available												49.28	1 / 6			
Keter, Erick (KEN) (1966)		no information available												49.99	2 / 7			
Wallenlind, Niklas (SWE) (1968)		no information available												50.28	8 / 8			

1991 European Cup (Frankfurt, GER)

FINAL date 29-Jun-91

Federle (2003) - http://www.fgs.uni-halle.de

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Akabusi, Kriss (GBR) (1958)	time	6.13	9.90	13.73	17.52	21.41		25.43	29.53	33.85	38.41	43.04		48.39	/ 1			
reaction time	interval		3.77	3.83	3.79	3.89		4.02	4.10	4.32	4.56	4.63	5.35			11.39	12.01	13.51
	velocity	7.34	9.28	9.14	9.23	9.00		8.71	8.54	8.10	7.68	7.56	7.48	8.27		9.22	8.74	7.77
H1 lead leg	strides																	
Caristan, Stéphane (FRA) (1	time	6.06	9.84	13.70	17.58	21.52		25.62	30.07	34.54	39.17	43.95		49.43	/ 2			
reaction time	interval		3.78	3.86	3.88	3.94		4.10	4.45	4.47	4.63	4.78	5.48			11.52	12.49	13.88
	velocity	7.43	9.26	9.07	9.02	8.88		8.54	7.87	7.83	7.56	7.32	7.30	8.09		9.11	8.41	7.56
H1 lead leg	strides																	
Mori, Fabrizio (ITA) (1969)	time	6.43	10.33	14.28	18.27	22.35		26.60	31.01	35.38	40.01	44.65		49.76	/ 3			
reaction time	interval		3.90	3.95	3.99	4.08		4.25	4.41	4.37	4.63	4.64	5.11			11.84	12.74	13.64
	velocity	7.00	8.97	8.86	8.77	8.58		8.24	7.94	8.01	7.56	7.54	7.83	8.04		8.87	8.24	7.70
H1 lead leg	strides																	
Budko, Vladimir (RUS) (1965	time	6.31	10.15	14.07	18.03	22.05		26.17	30.49	34.89	39.51	44.35		49.96	/ 4			
reaction time	interval		3.84	3.92	3.96	4.02		4.12	4.32	4.40	4.62	4.84	5.61			11.72	12.46	13.86
	velocity	7.13	9.11	8.93	8.84	8.71		8.50	8.10	7.95	7.58	7.23	7.13	8.01		8.96	8.43	7.58
H1 lead leg	strides																	
Kucej, Jožef (TCH) (1965)	time	6.09	9.93	13.82	17.82	21.96		26.24	30.55	35.04	39.75	44.63		50.27	/ 5			
reaction time	interval		3.84	3.89	4.00	4.14		4.28	4.31	4.49	4.71	4.88	5.64			11.73	12.73	14.08
	velocity	7.39	9.11	9.00	8.75	8.45		8.18	8.12	7.80	7.43	7.17	7.09	7.96		8.95	8.25	7.46
H1 lead leg	strides																	
Schiller, Udo (GER) (1967)	time	6.27	10.19	14.15	18.11	22.23		26.53	31.04	35.62	40.26	45.02		50.67	/ 6			
reaction time	interval		3.92	3.96	3.96	4.12		4.30	4.51	4.58	4.64	4.76	5.65			11.84	12.93	13.98
	velocity	7.18	8.93	8.84	8.84	8.50		8.14	7.76	7.64	7.54	7.35	7.08	7.89		8.87	8.12	7.51
H1 lead leg	strides																	

1990 European Championships (Split, YUG)

Behm (1995) - la tactique du 400 haies

FINAL

date 29-Aug-90

Arnold (1992) - Hurdling

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Akabusi, Kriss (GBR) (1958)		time	6.0	9.7	13.6	17.4	21.3	23.1	25.4	29.5	33.8	38.2	42.7		47.92	5 / 1			*Arnold (1992)*
reaction time		interval		3.70	3.90	3.80	3.90		4.10	4.10	4.30	4.40	4.50	5.22	NR		11.40	12.10	13.20
		velocity	7.50	9.46	8.97	9.21	8.97	8.66	8.54	8.54	8.14	7.95	7.78	7.66	8.35		9.21	8.68	7.95
H1 lead leg	R	strides	20	13	13	13	13		13	13	14	14	15	16	157				
Nylander, Sven (SWE) (1962)		time	6.1	9.8	13.6	17.5	21.5		25.6	29.9	34.4	38.8	43.3		48.43	6 / 2			*Behm (1995)*
reaction time		interval		3.7	3.8	3.9	4.0		4.1	4.3	4.5	4.4	4.5	5.13			11.40	12.40	13.40
		velocity	7.38	9.46	9.21	8.97	8.75		8.54	8.14	7.78	7.95	7.78	7.80	8.26		9.21	8.47	7.84
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	14	17.2	155.2				
Wallenlind, Niklas (SWE) (19		time	6.1	9.9	13.8	17.7	21.7		25.8	30.2	34.6	39.0	43.4		48.52	4 / 3			*Behm (1995)*
reaction time		interval		3.8	3.9	3.9	4.0		4.1	4.4	4.4	4.4	4.4	5.12	PB		11.60	12.50	13.20
		velocity	7.38	9.21	8.97	8.97	8.75		8.54	7.95	7.95	7.95	7.95	7.81	8.24		9.05	8.40	7.95
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	15	18	161				
Zadoinov, Vadim (URS) (1969)		no information available													48.61	1 / 4			
Diagana, Stéphane (FRA) (1969)		no information available													48.92	2 / 5			
Kohrbruck, Carsten (FRG) (1967)		no information available													48.95	3 / 6			

1988 Olympic Games (Seoul, KOR)

Gill (1990) - atletismo (I) carreras y marcha

FINAL

date 25-Sep-88

Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Phillips, Andre (USA) (1959)		time	5.80	9.36	13.13	16.97	20.93		24.98	29.14	33.18	37.45	41.99		47.19	6 / 1			*Brüggemann (1990)*
reaction time	0.150	interval		3.56	3.77	3.84	3.96		4.05	4.16	4.04	4.27	4.54	5.20	OR / PB		11.17	12.17	12.85
		velocity	7.76	9.83	9.28	9.11	8.84		8.64	8.41	8.66	8.20	7.71	7.69	8.48		9.40	8.63	8.17
H1 lead leg	L	strides	19	13	13	13	13		13	13	13	13	13	17.9	153.9				
Dia Ba, Amadou (SEN) (1958		time	5.96	9.60	13.33	17.13	21.01		25.06	29.26	33.44	37.83	42.27		47.23	5 / 2			*Brüggemann (1990)*
reaction time	0.220	interval		3.64	3.73	3.80	3.88		4.05	4.20	4.18	4.39	4.44	4.96	NR		11.17	12.13	13.01
		velocity	7.55	9.62	9.38	9.21	9.02		8.64	8.33	8.37	7.97	7.88	8.06	8.47		9.40	8.66	8.07
H1 lead leg	L	strides	20	13	13	13	13		13	14	14	14	14	18	159				
Moses, Edwin (USA) (1955)		time	5.89	9.56	13.32	17.16	21.00		25.01	29.08	33.26	37.60	42.19		47.56	3 / 3			*Gill (1990)*
reaction time	0.209	interval		3.67	3.76	3.84	3.84		4.01	4.07	4.18	4.34	4.59	5.37			11.27	11.92	13.11
		velocity	7.64	9.54	9.31	9.11	9.11		8.73	8.60	8.37	8.06	7.63	7.45	8.41		9.32	8.81	8.01
H1 lead leg	L	strides	19	13	13	13	13		13	13	13	13	13	16.5	152.5				
Young, Kevin (USA) (1966)		time	6.07	9.72	13.40	17.20	21.09		25.13	29.25	33.46	37.94	42.61		47.94	2 / 4			*Brüggemann (1990)*
reaction time	0.214	interval		3.65	3.68	3.80	3.89		4.04	4.12	4.21	4.48	4.67	5.33			11.13	12.05	13.36
		velocity	7.41	9.59	9.51	9.21	9.00		8.66	8.50	8.31	7.81	7.49	7.50	8.34		9.43	8.71	7.86
H1 lead leg	L	strides	20	12	12	12	12		13	13	13	13	14	17	151				
Graham, Winthrop (JAM) (1!		time	6.15	9.96	13.79	17.68	21.57		25.61	29.69	34.02	38.40	42.95		48.04	4 / 5			*Brüggemann (1990)*
reaction time	0.191	interval		3.81	3.83	3.89	3.89		4.04	4.08	4.33	4.38	4.55	5.09	PB		11.53	12.01	13.26
		velocity	7.32	9.19	9.14	9.00	9.00		8.66	8.58	8.08	7.99	7.69	7.86	8.33		9.11	8.74	7.92
H1 lead leg	L	strides	21	14	13	14	13		14	14	14	14	14	17.3	162.3				
Akabusi, Kriss (GBR) (1958)		time	6.08	9.80	13.57	17.41	21.41		25.62	29.82	34.22	38.75	43.47		48.69	7 / 6			*Brüggemann (1990)*
reaction time	0.223	interval		3.72	3.77	3.84	4.00		4.21	4.20	4.40	4.53	4.72	5.22			11.33	12.41	13.65
		velocity	7.40	9.41	9.28	9.11	8.75		8.31	8.33	7.95	7.73	7.42	7.66	8.22		9.27	8.46	7.69
H1 lead leg	R	strides	20	13	13	13	13		14	14	14	14	15	18	161				
Schmid, Harald (FRG) (1957)		time	6.03	9.68	13.58	17.58	21.69		25.93	30.25	34.74	39.26	43.83		48.76	1 / 7			*Brüggemann (1990)*
reaction time	0.205	interval		3.65	3.90	4.00	4.11		4.24	4.32	4.49	4.52	4.57	4.93			11.55	12.67	13.58
		velocity	7.46	9.59	8.97	8.75	8.52		8.25	8.10	7.80	7.74	7.66	8.11	8.20		9.09	8.29	7.73
H1 lead leg	L	strides	21	13	13	13	13		13	13	14	14	14	17	158				
Itt, Edgar (FRG) (1967)		time	6.04	9.90	13.77	17.69	21.77		25.98	30.26	34.63	39.07	43.59		48.78	8 / 8			*Brüggemann (1990)*
reaction time	0.187	interval		3.86	3.87	3.92	4.08		4.21	4.28	4.37	4.44	4.52	5.19			11.65	12.57	13.33
		velocity	7.45	9.07	9.04	8.93	8.58		8.31	8.18	8.01	7.88	7.74	7.71	8.20		9.01	8.35	7.88
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	14	14	16.8	159.8				

Semi-Final 2

date 24-Sep-88

Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Phillips, Andre (USA) (1959)		time	5.92	9.61	13.44	17.37	21.34		25.42	29.63	33.86	38.22	42.91		48.19	5 / 1			
reaction time		interval		3.69	3.83	3.93	3.97		4.08	4.21	4.23	4.36	4.69	5.28			11.45	12.26	13.28
		velocity	7.60	9.49	9.14	8.91	8.82		8.58	8.31	8.27	8.03	7.46	7.58	8.30		9.17	8.56	7.91
H1 lead leg		strides	19	13	13	13	13		13	13	13	13	14	18	155				
Graham, Winthrop (JAM) (1!		time	6.00	9.85	13.77	17.72	21.70		25.78	29.95	34.27	38.74	43.32		48.37	6 / 2			
reaction time		interval		3.85	3.92	3.95	3.98		4.08	4.17	4.32	4.47	4.58	5.05			11.72	12.23	13.37
		velocity	7.50	9.09	8.93	8.86	8.79		8.58	8.39	8.10	7.83	7.64	7.92	8.27		8.96	8.59	7.85
H1 lead leg		strides	21	14	14	13	13		14	14	14	14	15	17.5	163.5				
Dia Ba, Amadou (SEN) (1958		time	6.16	10.00	13.91	17.73	21.78		25.89	30.18	34.49	38.99	43.48		48.48	4 / 3			
reaction time		interval		3.84	3.91	3.82	4.05		4.11	4.29	4.31	4.50	4.49	5.00			11.57	12.45	13.30

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

	velocity	7.31	9.11	8.95	9.16	8.64	8.52	8.16	8.12	7.78	7.80	8.00	8.25		9.08	8.43	7.89
H1 lead leg	strides	20	13	13	13	13	13	14	14	14	14	17	158				
Itt, Edgar (FRG) (1967)	time	6.08	9.79	13.65	17.56	21.58	25.78	30.14	34.60	39.15	43.69		48.86	2 / 4			
reaction time	interval		3.71	3.86	3.91	4.02	4.20	4.36	4.46	4.55	4.54	5.17			11.48	12.58	13.55
	velocity	7.40	9.43	9.07	8.95	8.71	8.33	8.03	7.85	7.69	7.71	7.74	8.19		9.15	8.35	7.75
H1 lead leg	strides	21	13	13	13	13	14	14	14	14	14	17.3	160.3				
Tomov, Toma (BUL) (1958)	time	5.96	9.77	13.65	17.64	21.70	25.90	30.14	34.61	39.23	43.84		48.90	3 / 5			
reaction time	interval		3.81	3.88	3.99	4.06	4.20	4.24	4.47	4.62	4.61	5.06			11.68	12.50	13.70
	velocity	7.55	9.19	9.02	8.77	8.62	8.33	8.25	7.83	7.58	7.59	7.91	8.18		8.99	8.40	7.66
H1 lead leg	strides	21	14	14	14	14	14	14	15	15	15	17.8	167.8				
Kitur, Simon (KEN) (1959)	time	6.12	9.92	13.81	17.81	21.90	26.10	30.45	34.91	39.63	44.45		49.74	1 / 6			
reaction time	interval		3.80	3.89	4.00	4.09	4.20	4.35	4.46	4.72	4.82	5.29			11.69	12.64	14.00
	velocity	7.35	9.21	9.00	8.75	8.56	8.33	8.05	7.85	7.42	7.26	7.56	8.04		8.98	8.31	7.50
H1 lead leg	strides	22	15	15	15	15	15	15	15	16	16	18.1	177.1				
Cuypers, Alain (BEL) (1967)	time	6.20	10.13	14.07	18.06	22.14	26.45	30.79	35.22	39.76	44.40		49.75	7 / 7			
reaction time	interval		3.93	3.94	3.99	4.08	4.31	4.34	4.43	4.54	4.64	5.35	PB		11.86	12.73	13.61
	velocity	7.26	8.91	8.88	8.77	8.58	8.12	8.06	7.90	7.71	7.54	7.48	8.04		8.85	8.25	7.71
H1 lead leg	strides	21	14	14	14	14	14	14	15	15	15	18.5	168.5				
Yego, Gideon (KEN) (1960)	time	6.20	10.14	14.07	18.06	22.17	26.30	30.55	34.93	39.60				8 /			
reaction time	interval		3.94	3.93	3.99	4.11	4.13	4.25	4.38	4.67			DQ		11.86	12.49	
	velocity	7.26	8.88	8.91	8.77	8.52	8.47	8.24	7.99	7.49					8.85	8.41	
H1 lead leg	strides	22	15	15	15	15	15	15	15	15			142				

Semi-Final 1

date 24-Sep-88

Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)	time	5.95	9.72	13.68	17.64	21.60		25.65	29.78	33.94	38.35	42.79		47.89	3 / 1			
reaction time	interval		3.77	3.96	3.96	3.96		4.05	4.13	4.16	4.41	4.44	5.10			11.69	12.14	13.01
	velocity	7.56	9.28	8.84	8.84	8.84		8.64	8.47	8.41	7.94	7.88	7.84	8.35		8.98	8.65	8.07
H1 lead leg	strides	19	13	13	13	13		13	13	13	13	13	16.5	152.5				
Young, Kevin (USA) (1966)	time	6.29	10.21	14.14	18.02	21.86		25.79	29.82	33.95	38.36	43.00		48.56	5 / 2			
reaction time	interval		3.92	3.93	3.88	3.84		3.93	4.03	4.13	4.41	4.64	5.56			11.73	11.80	13.18
	velocity	7.15	8.93	8.91	9.02	9.11		8.91	8.68	8.47	7.94	7.54	7.19	8.24		8.95	8.90	7.97
H1 lead leg	strides	20	13	13	13	13		13	13	13	13	14	17	155				
Schmid, Harald (FRG) (1957)	time	6.05	9.64	13.56	17.57	21.73		25.93	30.20	34.62	39.18	43.79		48.93	1 / 3			
reaction time	interval		3.59	3.92	4.01	4.16		4.20	4.27	4.42	4.56	4.61	5.14			11.52	12.63	13.59
	velocity	7.44	9.75	8.93	8.73	8.41		8.33	8.20	7.92	7.68	7.59	7.78	8.17		9.11	8.31	7.73
H1 lead leg	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Akabusi, Kriss (GBR) (1958)	time	6.14	9.93	13.81	17.74	21.78		25.87	30.11	34.49	39.20	43.92		49.22	6 / 4			
reaction time	interval		3.79	3.88	3.93	4.04		4.09	4.24	4.38	4.71	4.72	5.30			11.60	12.37	13.81
	velocity	7.33	9.23	9.02	8.91	8.66		8.56	8.25	7.99	7.43	7.42	7.55	8.13		9.05	8.49	7.60
H1 lead leg	strides	20	13	13	13	13		14	14	14	15	15	18	162				
Maritim, Joseph (KEN) (1968	time	6.48	10.40	14.44	18.37	22.44		26.62	30.86	35.26	39.79	44.35		49.50	4 / 5			
reaction time	interval		3.92	4.04	3.93	4.07		4.18	4.24	4.40	4.53	4.56	5.15			11.89	12.49	13.49
	velocity	6.94	8.93	8.66	8.91	8.60		8.37	8.25	7.95	7.73	7.68	7.77	8.08		8.83	8.41	7.78
H1 lead leg	strides	22	15	15	13	13		15	13	15	15	15	18	169				
Alonso, José (ESP) (1957)	time	6.05	9.89	13.77	17.70	21.74		25.95	30.26	34.71	39.40	44.20		49.57	8 / 6			
reaction time	interval		3.84	3.88	3.93	4.04		4.21	4.31	4.45	4.69	4.80	5.37			11.65	12.56	13.94
	velocity	7.44	9.11	9.02	8.91	8.66		8.31	8.12	7.87	7.46	7.29	7.45	8.07		9.01	8.36	7.53
H1 lead leg	strides	21	14	14	14	14		14	14	15	15	15	18	168				
Ehrle, Klaus (AUT) (1966)	time	6.16	10.00	13.92	17.93	22.01		26.25	30.74	35.46	40.44	45.52		51.04	2 / 7			
reaction time	interval		3.84	3.92	4.01	4.08		4.24	4.49	4.72	4.98	5.08	5.52			11.77	12.81	14.78
	velocity	7.31	9.11	8.93	8.73	8.58		8.25	7.80	7.42	7.03	6.89	7.25	7.84		8.92	8.20	7.10
H1 lead leg	strides	21	13	13	13	13		14	14	15	15	15	18	164				
Graham, John (CAN) (1965)	time	6.05	10.05	14.09	18.14	22.38		26.75	31.16	35.79	40.68	45.68		51.33	7 / 8			
reaction time	interval		4.00	4.04	4.05	4.24		4.37	4.41	4.63	4.89	5.00	5.65			12.09	13.02	14.52
	velocity	7.44	8.75	8.66	8.64	8.25		8.01	7.94	7.56	7.16	7.00	7.08	7.79		8.68	8.06	7.23
H1 lead leg	strides	21	14	14	14	14		14	15	15	15	16	18.5	170.5				

1987 IAAF World Championships (Rome, ITA)

FINAL

date 01-Sep-87

Sušanka (1990) - time analyis of the 400m hurdles - Rome 1987 Scientific Report (2nd ed)

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)	time	5.82	9.49	13.21	16.97	20.73		24.58	28.58	32.89	37.42	42.15		47.46	3 / 1			
reaction time	interval		3.67	3.72	3.76	3.76		3.85	4.00	4.31	4.53	4.73	5.31	CR		11.15	11.61	13.57
	velocity	7.73	9.54	9.41	9.31	9.31		9.09	8.75	8.12	7.73	7.40	7.53	8.43		9.42	9.04	7.74
H1 lead leg L	strides	19	13	13	13	13		13	13	13	13	13	16.7	152.7				
Harris, Danny (USA) (1965)	time	6.07	9.20	13.44	17.22	21.09		24.98	29.17	33.35	37.76	42.42		47.48	4 / 2			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time		interval		3.13	4.24	3.78	3.87	3.89	4.19	4.18	4.41	4.66	5.06	PB		11.15	11.95	13.25
		velocity	7.41	11.18	8.25	9.26	9.04	9.00	8.35	8.37	7.94	7.51	7.91	8.42		9.42	8.79	7.92
H1 lead leg	L	strides	21	13	13	13	13	13	14	14	14	15	17.8	160.8				
Schmid, Harald (FRG) (1957)		time	6.00	9.69	13.45	17.29	21.17	25.06	29.02	33.22	37.73	42.32		47.48	5 / 3			
reaction time		interval		3.69	3.76	3.84	3.88	3.89	3.96	4.20	4.51	4.59	5.16	AR		11.29	11.73	13.30
		velocity	7.50	9.49	9.31	9.11	9.02	9.00	8.84	8.33	7.76	7.63	7.75	8.42		9.30	8.95	7.89
H1 lead leg	L	strides	21	13	13	13	13	13	13	13	14	14	17.7	157.7				
Nylander, Sven (SWE) (1962)		no information available												48.37	6 / 4			
Dia Ba, Amadou (SEN) (1958)		no information available												48.37	1 / 5			
Amike, Henry (NGR) (1961)		no information available												48.63	2 / 6			
Akabusi, Kriss (GBR) (1958)		no information available												48.74	7 / 7			
Alonso, Jose (ESP) (1957)		no information available												49.46	8 / 8			

Semi-Final 2

date 31-Aug-87

Sušanka (1990) - time analyis of the 400m hurdles - Rome 1987 Scientific Report (2nd ed)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)		time	5.92	9.61	13.37	17.17	21.14		25.26	29.47	33.82	38.37	43.07		48.38	6 / 1			
reaction time		interval		3.69	3.76	3.80	3.97		4.12	4.21	4.35	4.55	4.70	5.31			11.25	12.30	13.60
		velocity	7.60	9.49	9.31	9.21	8.82		8.50	8.31	8.05	7.69	7.45	7.53	8.27		9.33	8.54	7.72
H1 lead leg	L	strides	19	13	13	13	13		13	13	13	13	13	16	152				

Semi-Final 1

date 31-Aug-87

Sušanka (1990) - time analyis of the 400m hurdles - Rome 1987 Scientific Report (2nd ed)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Schmid, Harald (FRG) (1957)		time	6.09	9.73	13.53	17.44	21.48		25.50	29.66	33.99	38.51	43.07		48.23	6 / 1			
reaction time		interval		3.64	3.80	3.91	4.04		4.02	4.16	4.33	4.52	4.56	5.16			11.35	12.22	13.41
		velocity	7.39	9.62	9.21	8.95	8.66		8.71	8.41	8.08	7.74	7.68	7.75	8.29		9.25	8.59	7.83
H1 lead leg	L	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Harris, Danny (USA) (1965)		time	6.01	9.69	13.41	17.17	21.02		24.96	29.21	33.58	38.15	43.01		48.24	3 / 2			
reaction time		interval		3.68	3.72	3.76	3.85		3.94	4.25	4.37	4.57	4.86	5.23			11.16	12.04	13.80
		velocity	7.49	9.51	9.41	9.31	9.09		8.88	8.24	8.01	7.66	7.20	7.65	8.29		9.41	8.72	7.61
H1 lead leg	L	strides	21	13	13	13	13		13	14	14	14	15	18.1	161.1				

Heat 3

date 30-Aug-87

Sušanka (1990) - time analyis of the 400m hurdles - Rome 1987 Scientific Report (2nd ed)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Schmid, Harald (FRG) (1957)		time	6.10	9.89	13.82	17.79	21.95		26.23	30.65	35.08	39.68	44.28		49.28	5 / 1			
reaction time		interval		3.79	3.93	3.97	4.16		4.28	4.42	4.43	4.60	4.60	5.00			11.69	12.86	13.63
		velocity	7.38	9.23	8.91	8.82	8.41		8.18	7.92	7.90	7.61	7.61	8.00	8.12		8.98	8.16	7.70
H1 lead leg	L	strides	21	13	13	13	13		13	13	13	14	14	16.9	156.9				

Heat 2

date 30-Aug-87

Sušanka (1990) - time analyis of the 400m hurdles - Rome 1987 Scientific Report (2nd ed)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Harris, Danny (USA) (1965)		time	6.11	9.80	13.59	17.45	21.42		25.62	30.04	34.48	38.98	43.54		48.74	8 / 1			
reaction time		interval		3.69	3.79	3.86	3.97		4.20	4.42	4.44	4.50	4.56	5.20			11.34	12.59	13.50
		velocity	7.36	9.49	9.23	9.07	8.82		8.33	7.92	7.88	7.78	7.68	7.69	8.21		9.26	8.34	7.78
H1 lead leg	L	strides	21	13	13	13	13		14	14	14	14	14	17	160				

Heat 1

date 30-Aug-87

Sušanka (1990) - time analyis of the 400m hurdles - Rome 1987 Scientific Report (2nd ed)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)		time	5.90	9.75	13.69	17.62	21.68		25.77	30.07	34.44	38.96	43.60		49.03	2 / 1			
reaction time		interval		3.85	3.94	3.93	4.06		4.09	4.30	4.37	4.52	4.64	5.43			11.72	12.45	13.53
		velocity	7.63	9.09	8.88	8.91	8.62		8.56	8.14	8.01	7.74	7.54	7.37	8.16		8.96	8.43	7.76
H1 lead leg	L	strides	19	13	13	13	13		13	13	13	13	13	15.8	151.8				

1987 Résisprint International (LaChaux-de-Fonds, SUI)

FINAL

date 16-Aug-87

Behm (1988) - 45-39

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Vimbert, Gilles (FRA) (1966)		time	6.0	9.8	13.8	17.5	22.2		26.6	30.7	35.3	39.9	44.6		49.96	/ 1			
reaction time		interval		3.8	4.0	3.7	4.7		4.4	4.1	4.6	4.6	4.7	5.4	PB		11.5	13.2	13.9
		velocity	7.50	9.21	8.75	9.46	7.45		7.95	8.54	7.68	7.54	7.45	7.46	8.01		9.13	7.95	7.55
H1 lead leg		strides																	

1987 European Junior Championships (Birmingham, GBR)

FINAL

date 09-Aug-87

Veney - split times from PJ

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Leger, Stéphane (FRA) (1968		time	6.26	10.18	14.30	18.33	22.49		26.72	31.34	35.88	40.72	46.02		51.37	/ 3			
reaction time		interval		3.92	4.12	4.03	4.16		4.23	4.62	4.54	4.84	5.30	5.35			12.07	13.01	14.68
		velocity	7.19	8.93	8.50	8.68	8.41		8.27	7.58	7.71	7.23	6.60	7.48	7.79		8.70	8.07	7.15
H1 lead leg		strides		15	15	15	15		15	15	15	15	16		136				

1987 French National Championships (Annecy, FRA)

FINAL

date 09-Aug-87

Veney - split times from PJ

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Vimbert, Gilles (FRA) (1966)		time	5.98	9.83	13.76	17.88	22.18		26.46	30.70	35.26	39.87	44.61		49.98	/ 1			
reaction time		interval		3.85	3.93	4.12	4.30		4.28	4.24	4.56	4.61	4.74	5.37			11.90	12.82	13.91
		velocity	7.53	9.09	8.91	8.50	8.14		8.18	8.25	7.68	7.59	7.38	7.45	8.00		8.82	8.19	7.55
H1 lead leg		strides	20	13	13	13	14		14	14	14	15	15		145				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Gonigam, Philippe (FRA) (19	time	6.15	10.12	14.23	18.46	22.68	26.94	31.30	35.69	40.33	45.01		50.60	/ 2			
reaction time	interval		3.97	4.11	4.23	4.22	4.26	4.36	4.39	4.64	4.68	5.59			12.31	12.84	13.71
	velocity	7.32	8.82	8.52	8.27	8.29	8.22	8.03	7.97	7.54	7.48	7.16	7.91		8.53	8.18	7.66
H1 lead leg	strides	22	15	15	15	15	15	15	15	15	16		158				
Duvigneau, Dominique (FRA	time	6.09	10.11	14.19	18.38	22.55	26.92	31.37	36.03	40.70	45.42		50.92	/ 3			
reaction time	interval		4.02	4.08	4.19	4.17	4.37	4.45	4.66	4.67	4.72	5.50			12.29	12.99	14.05
	velocity	7.39	8.71	8.58	8.35	8.39	8.01	7.87	7.51	7.49	7.42	7.27	7.86		8.54	8.08	7.47
H1 lead leg	strides	21	14	14	14	14	14	15	15	15	15		151				
Blondel, Alain (FRA) (1962)	time	6.00	10.20	14.50	18.70	22.90	27.20	31.50	36.05	40.70	45.40		51.16	/ 4			
reaction time	interval		4.20	4.30	4.20	4.20	4.30	4.30	4.55	4.65	4.70	5.76			12.70	12.80	13.90
	velocity	7.50	8.33	8.14	8.33	8.33	8.14	8.14	7.69	7.53	7.45	6.94	7.82		8.27	8.20	7.55
H1 lead leg	strides		15	15	15	15	15	15	15	15	15		135				
Valentian, Jean-Pascal (FRA)	time	6.25	10.22	14.27	18.54	22.81	26.99	31.59	36.14	40.91	45.79		51.49	/ 5			
reaction time	interval		3.97	4.05	4.27	4.27	4.18	4.60	4.55	4.77	4.88	5.70			12.29	13.05	14.20
	velocity	7.20	8.82	8.64	8.20	8.20	8.37	7.61	7.69	7.34	7.17	7.02	7.77		8.54	8.05	7.39
H1 lead leg	strides		14														
Garnier, Philippe (FRA) (196	time	6.07	10.18	14.43	18.59	22.64	26.96	31.33	35.85	40.59	45.67		51.80	/ 6			
reaction time	interval		4.11	4.25	4.16	4.05	4.32	4.37	4.52	4.74	5.08	6.13			12.52	12.74	14.34
	velocity	7.41	8.52	8.24	8.41	8.64	8.10	8.01	7.74	7.38	6.89	6.53	7.72		8.39	8.24	7.32
H1 lead leg	strides																

1987 Meeting BNP D'Athletisme (Paris, FRA)

FINAL date 16-Jul-87 *Behm (1988) - 45-39*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Dia Bâ, Amadou (SEN) (1958	time	5.7	9.5	13.3	17.2	21.2		25.3	29.5	34.1		43.3		48.89	/ 1			
reaction time	interval		3.8	3.8	3.8	4.1		4.0	4.3	4.6		9.20	5.59			11.45	12.36	13.79
	velocity	7.89	9.11	9.26	9.14	8.58		8.71	8.22	7.63		7.61	7.16	8.18		9.17	8.50	7.61
H1 lead leg	strides																	
Moses, Edwin (USA) (1955)	time	5.8	9.4	13.0	16.7	20.4		24.3	28.4	32.8	37.7			dnf	/ --			
reaction time	interval		3.6	3.6	3.7	3.7		3.9	4.2	4.4	5.0			*fell*		10.90	11.76	
	velocity	7.83	9.67	9.70	9.54	9.41		9.00	8.43	8.03	7.04					9.63	8.93	
H1 lead leg	strides																	

1986 European Championships (Stuttgart, FRG)

FINAL date 28-Aug-86 *Behm (1995) - la tactique du 400 haies*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Schmid, Harald (FRG) (1957)	time	5.8	9.4	13.3	17.2	21.3		25.5	29.8	34.3	38.7	43.3		48.65	/ 1			
reaction time	interval		3.6	3.9	3.9	4.1		4.2	4.3	4.5	4.4	4.6	5.35			11.40	12.60	13.50
	velocity	7.76	9.72	8.97	8.97	8.54		8.33	8.14	7.78	7.95	7.61	7.48	8.22		9.21	8.33	7.78
H1 lead leg	strides	21	13	13	13	13		13	13	13	14	14		140				
Vasilyev, Aleksandr (URS) (1	time	5.9	9.8	13.7	17.7	21.9		26.1	30.3	34.7	39.0	43.5		48.76	/ 2			
reaction time	interval		3.9	3.9	4.0	4.2		4.2	4.2	4.4	4.3	4.5	5.26			11.80	12.60	13.20
	velocity	7.63	8.97	8.97	8.75	8.33		8.33	8.33	7.95	8.14	7.78	7.60	8.20		8.90	8.33	7.95
H1 lead leg	strides		13	13	13	14		14	14	14	15	15		125				
Nylander, Sven (SWE) (1962)	time	5.9	9.7	13.6	17.6	21.7		26.0	30.4	34.9	39.5	44.1		49.38	/ 3			
reaction time	interval		3.8	3.9	4.0	4.1		4.3	4.4	4.5	4.6	4.6	5.28			11.70	12.80	13.70
	velocity	7.63	9.21	8.97	8.75	8.54		8.14	7.95	7.78	7.61	7.61	7.58	8.10		8.97	8.20	7.66
H1 lead leg	strides	20	13	13	13	13		13	13	13	14	14		139				
Tomov, Toma (BUL) (1958)		no information available												49.62	/ 4			
Zemskov, Tagir (URS) (1962)		no information available												50.02	/ 5			
Alonso, José (ESP) (1957)		no information available												50.30	/ 6			

1986 French National Championships (Aix les Bains, FRA)

FINAL date 10-Aug-86 *Veney - split times from PJ*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Gonigam, Philippe (FRA) (19	time	6.11	10.03	14.09	18.17	22.36		26.58	30.81	35.16	39.62	44.16		49.82	/ 1			
reaction time	interval		3.92	4.06	4.08	4.19		4.22	4.23	4.35	4.46	4.54	5.66			12.06	12.64	13.35
	velocity	7.36	8.93	8.62	8.58	8.35		8.29	8.27	8.05	7.85	7.71	7.07	8.03		8.71	8.31	7.87
H1 lead leg	strides																	
Jonot, Franck (FRA) (1961)	time	6.05	10.02	13.86	17.80	21.94		26.03	30.53	34.95	39.57	44.39		50.21	/ 2			
reaction time	interval		3.97	3.84	3.94	4.14		4.09	4.50	4.42	4.62	4.82	5.82			11.75	12.73	13.86
	velocity	7.44	8.82	9.11	8.88	8.45		8.56	7.78	7.92	7.58	7.26	6.87	7.97		8.94	8.25	7.58
H1 lead leg	strides																	
Serres, Jean-Michel (FRA) (1	time	6.00	10.10	14.26	18.33	22.50		26.72	30.98	35.60	40.25	44.97		51.03	/ 6			
reaction time	interval		4.10	4.16	4.07	4.17		4.22	4.26	4.62	4.65	4.72	6.06	**PB**		12.33	12.65	13.99
	velocity	7.50	8.54	8.41	8.60	8.39		8.29	8.22	7.58	7.53	7.42	6.60	7.84		8.52	8.30	7.51
H1 lead leg	strides																	

1986 IAAF World Junor Championships (Athens, GRE)

FINAL date 18-Jul-86

Miskos (1986) - IAAF biomechanical research - Athens 1986 - hurdle races

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Valle, Emilio (CUB) (1967)		time	6.06	9.96	13.87	17.92	21.86		26.50	31.12	35.64	40.22	44.92		50.02	/ 1			
reaction time		interval		3.90	3.91	4.05	3.94		4.64	4.62	4.52	4.58	4.70	5.10	CR		11.86	13.20	13.80
		velocity	7.43	8.97	8.95	8.64	8.88		7.54	7.58	7.74	7.64	7.45	7.84	8.00		8.85	7.95	7.61
H1 lead leg		strides	21	14	14	14	14		14	15	15	15	15	18	169				
Kakimori, Hiroshi (JPN) (196		time	6.21	9.92	13.94	18.30	21.95		26.08	30.48	34.98	39.68	44.50		50.09	/ 2			
reaction time		interval		3.71	4.02	4.36	3.65		4.13	4.40	4.50	4.70	4.82	5.59			12.09	12.18	14.02
		velocity	7.25	9.43	8.71	8.03	9.59		8.47	7.95	7.78	7.45	7.26	7.16	7.99		8.68	8.62	7.49
H1 lead leg		strides	22	13	13	13	13		15	15	15	15	15	19	168				
Maran, Pascal (FRA) (1967)		time	6.09	10.04	14.08	18.17	22.36		26.66	31.10	35.74	40.36	45.08		50.39	/ 3			
reaction time		interval		3.95	4.04	4.09	4.19		4.30	4.44	4.64	4.62	4.72	5.31			12.08	12.93	13.98
		velocity	7.39	8.86	8.66	8.56	8.35		8.14	7.88	7.54	7.58	7.42	7.53	7.94		8.69	8.12	7.51
H1 lead leg		strides	20	13	13	13	14		14	14	15	15	15	18	164				
Köhrbrück, Carsten (FRG) (1967)		no information available													50.58	/ 4			
Cuypers, Alain (BEL) (1967)		no information available													50.67	/ 5			
Boiko, Nikolay (URS) (1968)		no information available													50.87	/ 6			
Francis, Dolph (AUS) (1967)		no information available													51.69	/ 7			

1985 European Junior Championships (Cottbus, GDR)

FINAL date 25-Aug-85

Warburton (1985) - 1985 european junior championships - hurdles

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Köhrbrück, Carsten (FRG) (		time	6.46	10.09	14.09	18.37	22.66		27.21	31.50	36.24	40.78	45.63		51.23	/ 3			
reaction time		interval		3.63	4.00	4.28	4.29		4.55	4.29	4.74	4.54	4.85	5.60			11.91	13.13	14.13
		velocity	6.97	9.64	8.75	8.18	8.16		7.69	8.16	7.38	7.71	7.22	7.14	7.81		8.82	8.00	7.43
H1 lead leg		strides																	
Dobrovolskiy, Sergey (URS)		time		9.90	13.82	18.20	22.39		26.83	31.28	35.94	40.57	45.20		51.31	/ 4			
reaction time		interval			3.92	4.38	4.19		4.44	4.45	4.66	4.63	4.63	6.11				13.08	13.92
		velocity		8.08	8.93	7.99	8.35		7.88	7.87	7.51	7.56	7.56	6.55	7.80			8.03	7.54
H1 lead leg		strides																	

1985 Great Britian vs. USA (Birmingham, GBR)

FINAL date 21-Jun-85

Warden (1989) - sprinting and hurdling

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Robertson, Max (GBR) (196		time	5.9	9.7	13.5	17.3	21.2		25.2	29.4	33.8	38.7	44.3		50.09	/ 2			
reaction time		interval		3.8	3.8	3.8	3.9		4.0	4.2	4.4	4.9	5.6	5.79			11.40	12.10	14.90
		velocity	7.63	9.21	9.21	9.21	8.97		8.75	8.33	7.95	7.14	6.25	6.91	7.99		9.21	8.68	7.05
H1 lead leg		strides	21	13	13	13	13		13	14	14	14	15	19	162				

1984 Olympic Games (Los Angeles, CA)

FINAL date 05-Aug-84

Behm (1995) - la tactique du 400 haies

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)		time	5.8	9.5	13.3	17.2	21.1	22.9	25.1	29.2	33.4	37.7	42.4		47.75	6 / 1			
reaction time	0.193	interval		3.7	3.8	3.9	3.9		4.0	4.1	4.2	4.3	4.7	5.35			11.40	12.00	13.20
		velocity	7.76	9.46	9.21	8.97	8.97	8.73	8.75	8.54	8.33	8.14	7.45	7.48	8.38		9.21	8.75	7.95
H1 lead leg	L	strides	19	13	13	13	13		13	13	13	13	13	16.2	152.2				
Harris, Danny (USA) (1965)		time	6.0	9.8	13.7	17.6	21.6	23.4	25.7	29.9	34.1	38.5	43.0		48.13	4 / 2			
reaction time	0.210	interval		3.8	3.9	3.9	4.0		4.1	4.2	4.2	4.4	4.5	5.13			11.60	12.30	13.10
		velocity	7.50	9.21	8.97	8.97	8.75	8.55	8.54	8.33	8.33	7.95	7.78	7.80	8.31		9.05	8.54	8.02
H1 lead leg	R	strides	21	13	13	13	13		13	13	13	14	15	17	158				
Schmid, Harald (FRG) (1957)		time	6.0	9.8	13.7	17.6	21.6	23.4	25.7	29.8	34.0	38.5	43.0		48.19	5 / 3			
reaction time	0.180	interval		3.8	3.9	3.9	4.0		4.1	4.1	4.2	4.5	4.5	5.19			11.60	12.20	13.20
		velocity	7.50	9.21	8.97	8.97	8.75	8.55	8.54	8.54	8.33	7.78	7.78	7.71	8.30		9.05	8.61	7.95
H1 lead leg	L	strides	21	13	13	13	13		13	13	13	14	14	17.2	157.2				
Nylander, Sven (SWE) (1962)	0.192	no information available													48.97	3 / 4			
Dia Bâ, Amadou (SEN) (1958	0.221	no information available													49.28	7 / 5			
Hawkins, Tranel (USA) (1962	0.188	no information available													49.42	1 / 6			
Zimmermann, Michel (BEL) (	0.320	no information available													50.69	8 / 7			
Amike, Henry (NGR) (1961)	0.178	no information available													53.18	2 / 8			

1983 Internationales Leichtathletiksportfest (Koblenz, FRG)

FINAL date 31-Aug-83

Arnold (1992) - Hurdling

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)		time	5.9	9.6	13.4	17.1	21.0	22.7	24.9	29.0	33.1	37.4	41.9		47.02	/ 1			
reaction time		interval		3.7	3.8	3.7	3.9		3.9	4.1	4.1	4.3	4.5	5.12	WR		11.20	11.90	12.90
		velocity	7.63	9.46	9.21	9.46	8.97	8.81	8.97	8.54	8.54	8.14	7.78	7.81	8.51		9.38	8.82	8.14
H1 lead leg	L	strides	19	13	13	13	13		13	13	13	13	13	16	152				

1983 IAAF World Championships (Helsinki, FIN)

FINAL date 09-Aug-83

McFarlane (1988) - The Science of Hurdling

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)	time	5.58	9.29	13.21	16.79	20.71		24.63	28.80	32.97	37.43	41.97		47.50	2 / 1			
reaction time	interval		3.71	3.92	3.58	3.92		3.92	4.17	4.17	4.46	4.54	5.53	CR		11.21	12.01	13.17
	velocity	8.06	9.43	8.93	9.78	8.93		8.93	8.39	8.39	7.85	7.71	7.23	8.42		9.37	8.74	7.97
H1 lead leg L	strides	19	13	13	13	13		13	13	13	13	13	15.7	151.7				
Schmid, Harald (FRG) (1957)	time	5.75	9.24	13.24		20.93		24.93	28.81	33.48	38.31	43.02		48.61	7 / 2			
reaction time	interval		3.49	4.00		7.69		4.00	3.88	4.67	4.83	4.71	5.59					14.21
	velocity	7.83	10.03	8.75		9.10		8.75	9.02	7.49	7.25	7.43	7.16	8.23				7.39
H1 lead leg L	strides	21	13	13	13	13		13	13	14	15	14	17	159				
Kharlov, Aleksandr (URS) (1	time	5.79	9.58	13.75		21.80		25.80	29.97	34.47	39.05	43.76		49.03	1 / 3			
reaction time	interval		3.79	4.17		8.05		4.00	4.17	4.50	4.58	4.71	5.27					13.79
	velocity	7.77	9.23	8.39		8.70		8.75	8.39	7.78	7.64	7.43	7.59	8.16				7.61
H1 lead leg L	strides	21	13	13	13	13		13	13	13	13	13	17	155				
Nylander, Sven (SWE) (1962)	no information available													49.06	8 / 4			
Phillips, Andre (USA) (1959)	no information available													49.24	6 / 5			
Lee, David (USA) (1959)	no information available													49.32	4 / 6			
Dia Bâ, Amadou (SEN) (1958)	no information available													49.61	3 / 7			
Szparak, Ryszard (POL) (1951)	no information available													49.78	5 / 8			

Semi-Final 2

date 08-Aug-83

Lyle - miscellaneous coaching notes

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Schmid, Harald (FRG) (1957)	time	5.46	9.14	12.76	16.70	20.54		24.41	28.69	32.98	37.69	42.45		48.57	2 / 1			
reaction time	interval		3.68	3.62	3.94	3.84		3.87	4.28	4.29	4.71	4.76	6.12			11.24	11.99	13.76
	velocity	8.24	9.51	9.67	8.88	9.11		9.04	8.18	8.16	7.43	7.35	6.54	8.24		9.34	8.76	7.63
H1 lead leg L	strides	21	13	13	13	13		13	13	13		14	17	143				

Semi-Final 1

date 08-Aug-83

Lyle - miscellaneous coaching notes

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)	time	5.59	9.38	13.30	17.18	21.03		25.01	29.16	33.50	37.91	42.32		48.11	1 / 1			
reaction time	interval		3.79	3.92	3.88	3.85		3.98	4.15	4.34	4.41	4.41	5.79			11.59	11.98	13.16
	velocity	8.05	9.23	8.93	9.02	9.09		8.79	8.43	8.06	7.94	7.94	6.91	8.31		9.06	8.76	7.98
H1 lead leg L	strides	19	13	13	13	13		13	13	13	13	13	15.5	151.5				

1982 European Championships (Athens, GRE)

FINAL

date 08-Sep-82

Behm (1995) - la tactique du 400 haies

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Schmid, Harald (FRG) (1957(	time	5.8	9.5	13.3	17.1	21.1		25.1	29.3	33.5	37.9	42.4		47.48	4 / 1			
reaction time	interval		3.7	3.8	3.8	4.0		4.0	4.2	4.2	4.4	4.5	5.1	AR / CR		11.30	12.20	13.10
	velocity	7.76	9.46	9.21	9.21	8.75		8.75	8.33	8.33	7.95	7.78	7.87	8.42		9.29	8.61	8.02
H1 lead leg L	strides	21	13	13	13	13		13	13	13	14	14	17	157				
Yatsevich, Aleksandr (URS) (	time	6.0	9.9	13.8	17.7	21.7		25.9	30.2	34.3	38.7	43.3		48.60	3 / 2			
reaction time	interval		3.9	3.9	3.9	4.0		4.2	4.3	4.1	4.4	4.6	5.3	PB		11.70	12.50	13.10
	velocity	7.50	8.97	8.97	8.97	8.75		8.33	8.14	8.54	7.95	7.61	7.55	8.23		8.97	8.40	8.02
H1 lead leg R	strides	21	15	15	15	15		15	15	15	15	15	18	174				
Ackermann, Uwe (GDR) (196	time	5.9	9.7	13.5	17.3	21.3		25.6	30.0	34.2	38.7	43.3		48.64	6 / 3			
reaction time	interval		3.8	3.8	3.8	4.0		4.3	4.4	4.2	4.5	4.6	5.3			11.40	12.70	13.30
	velocity	7.63	9.21	9.21	9.21	8.75		8.14	7.95	8.33	7.78	7.61	7.49	8.22		9.21	8.27	7.89
H1 lead leg L	strides	20	13	13	13	13		15	15	15	15	15	18.2	165.2				
Arkhipenko, Vasiliy (URS) (1957)	no information available													48.68	7 / 4			
Szparak, Ryszard (POL) (1951)	no information available													49.41	8 / 5			
Charlov, Alexandr (URS)	no information available													49.56	1 / 6			
Nylander, Sven (SWE) (1962)	no information available													49.64	5 / 7			
Tomov, Toma (BUL) (1958)	no information available													50.10	2 / 8			

Semi-Final 2

date 07-Sep-82

(1982) - XIII championnats d'Europe d'Atletisma, Athens 1982

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Ackermann, Uwe (GDR) (196	time					21.5								49.32	/ 1			
reaction time	interval																	
	velocity					8.62								8.11				
H1 lead leg	strides																	

Heat 1

date 08-Sep-82

(1982) - XIII championnats d'Europe d'Atletisma, Athens 1982

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Guillen, Serge (FRA) (1960)	time	5.9		13.9		22.0			30.6		39.6			50.07	/ 2			
reaction time	interval			8.0		8.1			8.6		9.0							
	velocity	7.63		8.75		8.64			8.14		7.78			7.99				
H1 lead leg	strides																	

1982 GDR vs. USA (Karl-Marx-Stadt, GDR)

FINAL

date 09-Jul-82

Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdendisziplinen im olympiazyklus 1981/84

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Ackermann, Uwe (GDR) (196	time	5.97				21.67						43.34		48.50	/ 1			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	interval					15.70						21.67	5.16	PB				
	velocity	7.54				8.92						8.08	7.75	8.25				
H1 lead leg	strides																	

1982 TAC National Championships (Knoxville, TN)

FINAL date 20-Jun-82

Mann (1987) - the elite athlete program biomechanical analysis of the long hurdles: tac championship meet

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Patrick, David (USA) (1960)	time	6.22	10.16	14.08	17.98	21.94		25.88	30.12	34.52	38.96	43.66		48.57	/ 1			
reaction time	interval		3.94	3.92	3.90	3.96		3.94	4.24	4.40	4.44	4.70	4.91			11.76	12.14	13.54
	velocity	7.23	8.88	8.93	8.97	8.84		8.88	8.25	7.95	7.88	7.45	8.15	8.24		8.93	8.65	7.75
H1 lead leg	strides																	
Phillips, Andre (USA) (1959)	time	6.02	9.88	13.82	17.74	21.70		25.64	29.66	34.04	38.66	43.52		48.62	/ 2			
reaction time	interval		3.86	3.94	3.92	3.96		3.94	4.02	4.38	4.62	4.86	5.10			11.72	11.92	13.86
	velocity	7.48	9.07	8.88	8.93	8.84		8.88	8.71	7.99	7.58	7.20	7.84	8.23		8.96	8.81	7.58
H1 lead leg	strides																	
Lee, David (USA) (1959)	time	6.36	10.18	14.08	17.94	21.80		25.82	30.00	34.44	38.98	43.80		48.96	/ 3			
reaction time	interval		3.82	3.90	3.86	3.86		4.02	4.18	4.44	4.54	4.82	5.16			11.58	12.06	13.80
	velocity	7.08	9.16	8.97	9.07	9.07		8.71	8.37	7.88	7.71	7.26	7.75	8.17		9.07	8.71	7.61
H1 lead leg	strides																	
Brown, Ed (USA) (1961)		no information available												49.52	/ 4			
Holloway, Bernie (USA) (1961)		no information available												49.76	/ 5			
Rambo, Tony (USA) (1960)		no information available												50.00	/ 6			

1981 ISTAF (West Berlin, FRG)

FINAL date 21-Aug-81

Behm (1988) - 45-39

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)	time	5.7	9.4	13.3	17.1	20.9		24.9	29.0	33.3	37.7	42.1		47.27	/ 1			
reaction time	interval		3.7	3.9	3.8	3.8		4.0	4.1	4.3	4.4	4.4	5.17			11.40	11.90	13.10
	velocity	7.89	9.46	8.97	9.21	9.21		8.75	8.54	8.14	7.95	7.95	7.74	8.46		9.21	8.82	8.02
H1 lead leg	strides		13	12	12	13		13	13	13	13	13		115				

1981 Weltklasse (Zurich, SUI)

FINAL date 19-Aug-81

Behm (1988) - 45-39

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)	time	5.7	9.4	13.1	16.8	20.7		24.7	28.9	33.1	37.7	42.3		47.64	/ 1			
reaction time	interval		3.7	3.7	3.7	3.9		4.0	4.2	4.2	4.6	4.6	5.34			11.10	12.10	13.40
	velocity	7.89	9.46	9.46	9.46	8.97		8.75	8.33	8.33	7.61	7.61	7.49	8.40		9.46	8.68	7.84
H1 lead leg	strides		12	12	12	12		13	13	13	13	13		113				

1981 USSR vs. GDR (Tbilisi, URS)

FINAL date 26-Jun-81

Breizer (1982) - in the distance: volker beck

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Beck, Volker (GDR) (1956)	time	6.27	9.95	13.83	17.68	21.92		25.91	30.27	34.70	39.13	44.01		49.14	/ 1			
reaction time	interval		3.68	3.88	3.85	4.24		3.99	4.36	4.43	4.43	4.88	5.13			11.41	12.59	13.74
	velocity	7.18	9.51	9.02	9.09	8.25		8.77	8.03	7.90	7.90	7.17	7.80	8.14		9.20	8.34	7.64
H1 lead leg	strides	20	13	13	13	13		13	13	14	14	14	18	158				

1980 Olympic Games (Moscow, URS)

Behm (1999) - Les chiffres: Les podiums de tous les championnates

FINAL date 26-Jul-80

Lamare (1980) - resultats complets et commentaires- Moscow 1980

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Beck, Volker (GDR) (1956)	time	6.2	10.1	13.8	17.7	21.7		25.8	30.1	34.5	39.0	43.6		48.70	8 / 1		*Lamare (1980)*	
reaction time 0.161	interval		3.9	3.7	3.9	4.0		4.1	4.3	4.4	4.5	4.6	5.10			11.50	12.40	13.50
	velocity	7.26	8.97	9.46	8.97	8.75		8.54	8.14	7.95	7.78	7.61	7.84	8.21		9.13	8.47	7.78
H1 lead leg	strides		13	13	13	13		13	13	15	15	15		123				
Arkhipenko, Vasiliy (URS) (1	time					21.5								48.86	2 / 2		*Behm (1999)*	
reaction time 0.137	interval																	
	velocity					8.60								8.19				
H1 lead leg	strides		15	15	15	15		15	15	15	15	15		135				
Oakes, Gary (GBR) (1958)	0.166	no information available												49.11	1 / 3			
Vasilyev, Nikolay (URS) (1956	0.186	no information available												49.34	4 / 4			
Kopitar, Rok (YUG) (1959)	0.232	no information available												49.67	5 / 5			
Toboc, Horia (ROU) (1955)	0.300	no information available												49.84	7 / 6			
Meier, Franz (SUI) (1956)	0.143	no information available												59.00	6 / 7			
Bratanov, Yanko (BUL) (195	0.215	no information available												56.35	3 / 8			

1980 Mario Lanzi Memorial (Milan, ITA)

FINAL date 03-Jul-80

Behm (1995) - la tactique du 400 haies

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)	time	5.7	9.4	13.2	17.0	20.9		24.7	28.6	32.8	37.2	41.7		47.13	/ 1			
reaction time	interval		3.70	3.80	3.80	3.90		3.80	3.90	4.20	4.40	4.50	5.43	WR		11.30	11.60	13.10
	velocity	7.89	9.46	9.21	9.21	8.97		9.21	8.97	8.33	7.95	7.78	7.37	8.49		9.29	9.05	8.02
H1 lead leg	strides																	

1978 European Championships (Prague, TCH)

FINAL

date 31-Aug-78

Lamare (1978) - championnats d'Europa 1978

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Schmid, Harald (FRG) (1957)	time	6.04	9.77	13.63	17.54	21.47		25.69	29.88	34.25	38.78	43.29		48.51	/ 1			
reaction time	interval		3.73	3.86	3.91	3.93		4.22	4.19	4.37	4.53	4.51	5.22	CR		11.50	12.34	13.41
	velocity	7.45	9.38	9.07	8.95	8.91		8.29	8.35	8.01	7.73	7.76	7.66	8.25		9.13	8.51	7.83
H1 lead leg	strides																	
Stukalov, Dmitriy (URS) (1951)	no information available													49.72	/ 2			
Arkhipenko, Vasiliy (URS) (1957)	no information available													49.77	/ 3			
Meier, Franz (SUI) (1956)	no information available													49.84	/ 4			
Schulting, Harry (NED) (1956)	no information available													50.07	/ 5			
Nallet, Jean-Claude (FRA) (1947)	no information available													50.10	/ 6			
Alonso, Jose (ESP) (1957)	no information available													50.19	/ 7			
Toboc, Horia (ROU) (1955)	no information available													50.46	/ 8			

Semi-Final 2

date 30-Aug-78

Lamare (1978) - championnats d'Europa 1978

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nallet, Jean-Claude (FRA) (1	time	6.23	10.36	14.14	18.16	22.22								49.98	/ 2			
reaction time	interval		4.13	3.78	4.02	4.06										11.93		
	velocity	7.22	8.47	9.26	8.71	8.62								8.00		8.80		
H1 lead leg	strides																	

Behm (1995) - la tactique du 400 haies

1976 Olympic Games (Montreal, CAN)

Le Masurier (1977) - die olympischen 400-m-hürdenlauf vom Mexico City, München und Montreal

FINAL

date 25-Jul-76

McFarlane (1981) - understanding the 400m hurdles (in Jarver (ed) - the hurdles, 1981)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moses, Edwin (USA) (1955)		time	6.0	9.8	13.6	17.5	21.4	23.1	25.5	29.6	33.9	38.2	42.7		47.64	4 / 1	*McFarlane (1981)*	
reaction time		interval		3.80	3.80	3.90	3.90		4.10	4.10	4.30	4.30	4.50	4.94	WR		11.50	12.10	13.10
		velocity	7.50	9.21	9.21	8.97	8.97	8.66	8.54	8.54	8.14	8.14	7.78	8.10	8.40		9.13	8.68	8.02
H1 lead leg	L	strides	20	13	13	13	13		13	13	13	13	13	16	153				
Shine, Mike (USA) (1953)		time	6.1	9.9	13.8	17.7	21.7	23.4	25.9	30.2	34.5	38.9	43.4		48.69	1 / 2	*Le Masurier (1977)*	
reaction time		interval		3.80	3.90	3.90	4.00		4.20	4.30	4.30	4.40	4.50	5.29			11.60	12.50	13.20
		velocity	7.38	9.21	8.97	8.97	8.75	8.55	8.33	8.14	8.14	7.95	7.78	7.56	8.22		9.05	8.40	7.95
H1 lead leg	R	strides	22	15	15	15	15		15	15	15	15	15	18.7	175.7				
Gavrilenko, Yevgeniy (URS) (		time	6.0	9.7	13.4	17.4	21.5		25.7	29.9	34.5	39.0	43.8		49.45	8 / 3	*Behm (1995)*	
reaction time		interval		3.70	3.70	4.00	4.10		4.20	4.20	4.60	4.50	4.80	5.65			11.40	12.50	13.90
		velocity	7.50	9.46	9.46	8.75	8.54		8.33	8.33	7.61	7.78	7.29	7.08	8.09		9.21	8.40	7.55
H1 lead leg	L	strides		13	13	13	13		13	15	15	15	15		125				
Wheeler, Quentin (USA) (1955)	no information available														49.86	7 / 4			
Carvalho, Jose (POR) (1953)	no information available														49.94	3 / 5			
Bratanov, Yanko (BUL) (1952)	no information available														50.03	2 / 6			
Alfonso, Damaso (CUB) (1951)	no information available														50.19	6 / 7			
Pascoe, Alan (GBR) (1947)	no information available														51.29	5 / 8			

Semi-Final 2

date 24-Jul-76

Lamare (1976) - les jeux de la XXI olympia, Montreal 1976

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nallet, Jean-Claude (FRA) (1	time	5.8	9.8	13.8	17.8	22.0		26.0	30.5	35.0	39.7	44.3		50.08	4 / 5			
reaction time	interval		4.00	4.00	4.00	4.15		4.05	4.50	4.50	4.70	4.60	5.78			12.00	12.70	13.80
	velocity	7.76	8.75	8.75	8.75	8.43		8.64	7.78	7.78	7.45	7.61	6.92	7.99		8.75	8.27	7.61
H1 lead leg	strides																	

Semi-Final 1

date 24-Jul-76

Lamare (1976) - les jeux de la XXI olympia, Montreal 1976

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Wheeler, Quentin (USA) (19	time	6.1	10.0	14.1	18.1	22.4		26.6	31.1	35.5	40.1	44.6		50.22	8 / 4			
reaction time	interval		3.87	4.15	4.01	4.29		4.24	4.41	4.41	4.60	4.54	5.62			12.03	12.94	13.55
	velocity	7.40	9.04	8.43	8.73	8.16		8.25	7.94	7.94	7.61	7.71	7.12	7.96		8.73	8.11	7.75
H1 lead leg	strides																	

1975 West German National Championships (Gelsenkirchen, FRG)

FINAL

date 28-Jun-75

Helbig (1975) - 400-m-hürdenlauf

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Reibert, Werner (FRG) (1948	time	6.27	10.24	14.48	18.47	22.56	24.56	27.00	31.81	36.31	40.86	45.44		51.25	6 / 1			
reaction time	interval		3.97	4.24	3.99	4.09		4.44	4.81	4.50	4.55	4.58	5.81			12.20	13.34	13.63
	velocity	7.18	8.82	8.25	8.77	8.56	8.14	7.88	7.28	7.78	7.69	7.64	6.88	7.80		8.61	7.87	7.70
H1 lead leg	strides																	
Friedrich, Dieter (FRG) (1947	time	6.03	10.03	14.07	18.27	22.59	24.59	26.98	31.40	36.17	40.62	45.33		51.29	5 / 2			
reaction time	interval		4.00	4.04	4.20	4.32		4.39	4.42	4.77	4.45	4.71	5.96			12.24	13.13	13.93
	velocity	7.46	8.75	8.66	8.33	8.10	8.13	7.97	7.92	7.34	7.87	7.43	6.71	7.80		8.58	8.00	7.54
H1 lead leg	strides																	
Köhler, Hermann (FRG) (195	time	6.06	10.17	14.19	18.32	22.58	24.58	26.96	31.96	36.12	40.77	45.55		51.37	3 / 3			
reaction time	interval		4.11	4.02	4.13	4.26		4.38	5.00	4.16	4.65	4.78	5.82			12.26	13.64	13.59
	velocity	7.43	8.52	8.71	8.47	8.22	8.14	7.99	7.00	8.41	7.53	7.32	6.87	7.79		8.56	7.70	7.73
H1 lead leg	strides																	

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Ziegler, Rolf (FRG) (1950)	time	6.16	10.22	14.23	18.37	22.56	24.56	26.97	31.46	36.10	40.81	45.40		51.47	7 / 4			
reaction time	interval		4.06	4.01	4.14	4.19		4.41	4.49	4.64	4.71	4.59	6.07			12.21	13.09	13.94
	velocity	7.31	8.62	8.73	8.45	8.35	8.14	7.94	7.80	7.54	7.43	7.63	6.59	7.77		8.60	8.02	7.53
H1 lead leg	strides																	
Tille, Fritz (FRG) (1951)	time	6.20	10.23	14.36	18.48	22.67	24.67	27.03	31.68	36.46	41.12	46.12		51.96	1 / 5			
reaction time	interval		4.03	4.13	4.12	4.19		4.36	4.65	4.78	4.66	5.00	5.84			12.28	13.20	14.44
	velocity	7.26	8.68	8.47	8.50	8.35	8.11	8.03	7.53	7.32	7.51	7.00	6.85	7.70		8.55	7.95	7.27
H1 lead leg	strides																	
Dlouhy, Manfred (FRG) (195	time	6.28	10.32	14.41	18.66	22.99	24.99	27.06	31.63	36.70	41.39	46.39		52.14	2 / 6			
reaction time	interval		4.04	4.09	4.25	4.33		4.07	4.57	5.07	4.69	5.00	5.75			12.38	12.97	14.76
	velocity	7.17	8.66	8.56	8.24	8.08	8.00	8.60	7.66	6.90	7.46	7.00	6.96	7.67		8.48	8.10	7.11
H1 lead leg	strides																	
Geiger, Karl (FRG) (1953)	time	6.27	10.29	14.40	18.58	23.44	25.44	27.84	32.44	37.07	41.75	46.72		52.42	4 / 7			
reaction time	interval		4.02	4.11	4.18	4.86		4.40	4.60	4.63	4.68	4.97	5.70			12.31	13.86	14.28
	velocity	7.18	8.71	8.52	8.37	7.20	7.86	7.95	7.61	7.56	7.48	7.04	7.02	7.63		8.53	7.58	7.35
H1 lead leg	strides																	
Reinke, Ulrich (FRG)	time	6.22	10.24	14.46	18.66	23.09	25.09	27.56	32.26	37.24	42.05	47.62		54.54	8 / 8			
reaction time	interval		4.02	4.22	4.20	4.43		4.47	4.70	4.98	4.81	5.57	6.92			12.44	13.60	15.36
	velocity	7.23	8.71	8.29	8.33	7.90	7.97	7.83	7.45	7.03	7.28	6.28	5.78	7.33		8.44	7.72	6.84
H1 lead leg	strides																	

Letzelter (1973) - schrittgestaltung und geschwindigkeitsverlauf beim 400-m-hürdenlauf der olympischen spiele 1972

1972 Olympic Games (Munich, FRG)

Le Masurier (1977) - die olympischen 400-m-hürdenlauf vom Mexico City, München und Montreal

FINAL

date 03-Sep-72

McFarlane (1981) - understanding the 400m hurdles (in Jarver (ed) - the hurdles, 1981)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Akii-Bua, John (UGA) (1949)		time	6.1	9.8	13.6	17.4	21.3	23.0	25.4	29.5	33.7	38.1	42.6		47.82	1 / 1	*McFarlane (1981)*		
reaction time		interval		3.7	3.8	3.8	3.9		4.1	4.1	4.2	4.4	4.5	5.22	WR		11.30	12.10	13.10
		velocity	7.38	9.46	9.21	9.21	8.97	8.70	8.54	8.54	8.33	7.95	7.78	7.66	8.36		9.29	8.68	8.02
H1 lead leg	R	strides	21	13	13	13	13		14	14	14	15	15	18	163				
Mann, Ralph (USA) (1949)		time	6.0	9.7	13.6	17.6	21.3	23.0	25.4	29.7	33.9	38.4	43.1		48.51	6 / 2	*Le Masurier (1977)*		
reaction time		interval		3.7	3.9	4.0	3.7		4.1	4.3	4.2	4.5	4.7	5.41			11.60	12.10	13.40
		velocity	7.50	9.46	8.97	8.75	9.46	8.70	8.54	8.14	8.33	7.78	7.45	7.39	8.25		9.05	8.68	7.84
H1 lead leg	L	strides	21	13	13	13	13		13	13	15	15	15	19	163				
Hemery, David (GBR) (1944)		time	6.1	9.8	13.4	17.2	21.1	22.8	25.1	29.3	33.6	38.2	43.0		48.52	5 / 3	*McFarlane (1981)*		
reaction time		interval		3.7	3.6	3.8	3.9		4.0	4.2	4.3	4.6	4.8	5.52			11.10	12.10	13.70
		velocity	7.38	9.46	9.72	9.21	8.97	8.77	8.75	8.33	8.14	7.61	7.29	7.25	8.24		9.46	8.68	7.66
H1 lead leg	L	strides	21	13	13	13	13		13	15	15	15	15	18.2	164.2				
Seymour, Jim (USA) (1949)		time	6.1	9.9	13.8	17.7	21.7	23.4	25.9	30.2	34.5	39.1	43.5		48.64	4 / 4	*McFarlane (1981)*		
reaction time		interval		3.8	3.9	3.9	4.0		4.2	4.3	4.3	4.6	4.4	5.14			11.60	12.50	13.30
		velocity	7.38	9.21	8.97	8.97	8.75	8.55	8.33	8.14	8.14	7.61	7.95	7.78	8.22		9.05	8.40	7.89
H1 lead leg	L	strides	21	13	13	13	13		14	14	15	15	15	17.2	163.2				
Schubert, Rainer (FRG) (194		time	6.1	9.9	13.7	17.6	21.6	23.3	25.8	30.2	34.6	39.3	44.2		49.65	7 / 5	*McFarlane (1981)*		
reaction time		interval		3.8	3.8	3.9	4.0		4.2	4.4	4.4	4.7	4.9	5.45			11.50	12.60	14.00
		velocity	7.38	9.21	9.21	8.97	8.75	8.58	8.33	7.95	7.95	7.45	7.14	7.34	8.06		9.13	8.33	7.50
H1 lead leg	L	strides	21	13	13	13	13		13	15	15	15	15		146				
Gavrilenko, Yevgeniy (URS) (		time	6.0	9.8	13.7	17.6	21.6	23.3	25.9	30.3	34.8	39.3	44.1		49.66	2 / =6	*Letzelter (1973)*		
reaction time		interval		3.80	3.85	3.95	4.00		4.25	4.40	4.50	4.55	4.75	5.61			11.60	12.65	13.80
		velocity	7.50	9.21	9.09	8.86	8.75	8.58	8.24	7.95	7.78	7.69	7.37	7.13	8.05		9.05	8.30	7.61
H1 lead leg	L	strides	21	13	13	13	13		13		15	15	15		131				
Tziortzis, Stavros (GRE) (194		time	6.2	9.9	13.8	17.7	21.8	23.5	26.1	30.3	34.8	39.4	44.2		49.66	8 / =6	*McFarlane (1981)*		
reaction time		interval		3.7	3.9	3.9	4.1		4.3	4.2	4.5	4.6	4.8	5.46	NR		11.50	12.60	13.90
		velocity	7.26	9.46	8.97	8.97	8.54	8.51	8.14	8.33	7.78	7.61	7.29	7.33	8.05		9.13	8.33	7.55
H1 lead leg	R	strides	22	15	15	15	15		16	16	16	16	17		163				
Zorin, Yury (URS) (1947)		time	6.0	9.8	13.5	17.4	21.4		25.6	30.0	34.6	39.4	44.4		50.25	3 / 8	*Letzelter (1973)*		
reaction time		interval		3.75	3.75	3.90	4.00		4.20	4.40	4.60	4.80	4.95	5.90			11.40	12.60	14.35
		velocity	7.50	9.33	9.33	8.97	8.75		8.33	7.95	7.61	7.29	7.07	6.78	7.96		9.21	8.33	7.32
H1 lead leg	L	strides	20	13	13	13	13		13	13	15	15	15		143				

Semi-Final 2

date 02-Sep-72

Schmidt (1973) - vorolympishces training von john akii-bua über 400 hürden

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Büttner, Dieter (FRG) (1949)	time					21.4			30.2			44.7		dnf	2 / --			
reaction time	interval								8.80			14.50						14.50
	velocity					8.64			7.95			7.24						7.24
H1 lead leg	strides																	

Semi-Final 1

date 02-Sep-72

Schmidt (1973) - vorolympishces training von john akii-bua über 400 hürden

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Akii-Bua, John (UGA) (1949)	time					21.0			29.9			43.6		49.25	2 / 1			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	interval							8.90			13.70	5.65						13.70
	velocity					8.81		7.87			7.66	7.08	8.12					7.66
H1 lead leg	strides																	

Heat 5

date 01-Sep-72 — *Schmidt (1973) - vorolympishces training von john akii-bua über 400 hürden*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Ziegler, Rolf (FRG) (1951)	time					21.6			30.4			44.5		50.17	7 / 3			
reaction time	interval								8.80			14.10	5.67					14.10
	velocity					8.56			7.95			7.45	7.05	7.97				7.45
H1 lead leg	strides																	

Heat 4

date 01-Sep-72 — *Schmidt (1973) - vorolympishces training von john akii-bua über 400 hürden*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Akii-Bua, John (UGA) (1949)	time					21.5			29.9			43.3		50.35	2 / 1			
reaction time	interval								8.40			13.40	7.05					13.40
	velocity					8.60			8.33			7.84	5.67	7.94				7.84
H1 lead leg	strides																	

Heat 3

date 01-Sep-72 — *Schmidt (1973) - vorolympishces training von john akii-bua über 400 hürden*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mann, Ralph (USA) (1949)	time					21.8						44.6		50.18	5 / 2			
reaction time	interval											22.80	5.58					
	velocity					8.49						7.68	7.17	7.97				
H1 lead leg	strides																	

Heat 2

date 01-Sep-72 — *Schmidt (1973) - vorolympishces training von john akii-bua über 400 hürden*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hemery, David (GBR) (1944)	time					21.8			30.3			44.3		49.72	5 / 1			
reaction time	interval								8.50			14.00	5.42					14.00
	velocity					8.49			8.24			7.50	7.38	8.05				7.50
H1 lead leg	strides																	

Heat 1

date 01-Sep-72 — *Schmidt (1973) - vorolympishces training von john akii-bua über 400 hürden*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Büttner, Dieter (FRG) (1949)	time					21.5			30.4					49.78	1 / 1			
reaction time	interval								8.90									
	velocity					8.60			7.87					8.04				
H1 lead leg	strides																	

1972 USA Olympic Trials (Eugene, OR)

FINAL

date 02-Jul-72 — *(1972) - die große olympia-vorschau: von wettbewarb zu wettbewaib*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Mann, Ralph (USA) (1949)	time	5.9	9.5	13.5	17.3	21.2		25.3	29.7	34.0	38.5	42.1		48.4	8 / 1			
reaction time	interval		3.6	4.0	3.8	3.9		4.1	4.4	4.3	4.5	3.6	6.3	*(48.34)*		11.40	12.40	12.40
	velocity	7.63	9.72	8.75	9.21	8.97		8.54	7.95	8.14	7.78	9.72	6.35	8.26		9.21	8.47	8.47
H1 lead leg	strides																	

Bruggeman, Dick (USA) (1947)	no information available	48.6	6 / 2
Seymour, Jim (USA) (1949)	no information available	48.6	7 / 3
Collins, Bruce (USA) (1951)	no information available	49.5	3 / 4
Cassleman, Rob (USA) (1952)	no information available	49.5	5 / 5
Bolding, Jim (USA) (1949)	no information available	49.7	1 / 6
Steele, Bob (USA) (1949)	no information available	50.2	4 / 7
Wood, Carl (USA) (1949)	no information available	50.2	2 / 8

1971 European Championships (Helsinki, FIN)

FINAL

date 12-Aug-71 — *Behm (1995) - la tactique du 400 haies*

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nallet, Jean-Claude (FRA) (1	time	6.0	10.0	13.8	17.6	21.6		25.7	29.9	34.4	38.9	43.5		49.2	/ 1			
reaction time	interval		4.0	3.8	3.8	4.0		4.1	4.2	4.5	4.5	4.6	5.7	**CR**		11.60	12.30	13.60
	velocity	7.50	8.75	9.21	9.21	8.75		8.54	8.33	7.78	7.78	7.61	7.02	8.13		9.05	8.54	7.72
H1 lead leg	strides	19	13	13	13	13		13	13	15	15	15		142				
Rudolph, Christian (GDR) (1	time	6.0	10.0	13.9	17.7	21.7		25.7	29.9	34.4	38.9	43.5		49.3	/ 2			
reaction time	interval		4.0	3.9	3.8	4.0		4.0	4.2	4.5	4.5	4.6	5.8	**NR**		11.70	12.20	13.60
	velocity	7.50	8.75	8.97	9.21	8.75		8.75	8.33	7.78	7.78	7.61	6.90	8.11		8.97	8.61	7.72
H1 lead leg	strides		15	15	15	15		15	15	15	15	15		135				
Stukalov, Dmitriy (URS) (195	time	6.0	10.2	14.3	18.3	22.4		26.6	31.0	35.5	40.2	44.8		50.0	/ 3			
reaction time	interval		4.2	4.1	4.0	4.1		4.2	4.4	4.5	4.7	4.6	5.2	**PB**		12.30	12.70	13.80
	velocity	7.50	8.33	8.54	8.75	8.54		8.33	7.95	7.78	7.45	7.61	7.69	8.00		8.54	8.27	7.61
H1 lead leg	strides		13	13	13	13		15	15	15	15	15		127				

Büttner, Dieter (FRG) (1949)	no information available	50.1	/ 4
Gavrilenko, Yevgeny (URS) (1951)	no information available	50.5	/ 5
Salin, Ari (FIN) (1947)	no information available	50.6	/ 6

1970 France vs. USA (Colombes, FRA)

FINAL

date 08-Jul-70

Behm (1988) - 45-39

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Nallet, Jean-Claude (FRA) (1	time	5.9	9.9	13.7	17.4	21.7		25.6	29.8	34.3	38.9	43.4		48.6	/ 1			
reaction time	interval		4.0	3.8	3.7	4.3		3.9	4.2	4.5	4.6	4.5	5.2	PB		11.50	12.40	13.60
	velocity	7.63	8.75	9.21	9.46	8.14		8.97	8.33	7.78	7.61	7.78	7.69	8.23		9.13	8.47	7.72
H1 lead leg	strides	19	13	13	13	13		13	13	15	15	15		142				

McFarlane (1981) - understanding the 400m hurdles (in Jarver (ed) - the hurdles, 1981)

1968 Olympic Games (Mexico City, MEX) (Altitude)

Le Masurier (1972) - track speed- hurdles, sprints, and relays

FINAL

date 15-Oct-68

Dessons (1982) - traite d'athletisme - volume 1: les courses

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hemery, David (GBR) (1944)	time	6.0	9.8	13.6	17.5	21.5	23.3	25.4	29.6	33.9	38.3	42.8		48.1	6 / 1			
reaction time	interval		3.8	3.8	3.9	4.0		3.9	4.2	4.3	4.4	4.5	5.3	WR		11.50	12.10	13.20
	velocity	7.50	9.21	9.21	8.97	8.75	8.58	8.97	8.33	8.14	7.95	7.78	7.55	8.32	(48.12)	9.13	8.68	7.95
H1 lead leg L	strides	21	13	13	13	13		13	15	15	15	15	18	164				
Hennige, Gerhard (FRG) (19	time	6.0	9.9	13.8	17.8	21.9	23.8	26.1	30.5	34.9	39.4	44.0		49.0	2 / 2			
reaction time	interval		3.9	3.9	4.0	4.1		4.2	4.4	4.4	4.5	4.6	5.0	(49.02)		11.80	12.70	13.50
	velocity	7.50	8.97	8.97	8.75	8.54	8.40	8.33	7.95	7.95	7.78	7.61	8.00	8.16		8.90	8.27	7.78
H1 lead leg L	strides	21	13	13	13	13		13	15	15	15	15	18.2	164.2				
Sherwood, John (GBR) (194	time	6.0	9.8	13.7	17.7	21.8	23.7	26.0	30.2	34.7	39.4	43.9		49.0	8 / 3			
reaction time	interval		3.8	3.9	4.0	4.1		4.2	4.2	4.5	4.7	4.5	5.1	(49.03)		11.70	12.50	13.70
	velocity	7.50	9.21	8.97	8.75	8.54	8.44	8.33	8.33	7.78	7.45	7.78	7.84	8.16		8.97	8.40	7.66
H1 lead leg L	strides	21	13	13	13	13		13	15	15	15	15		146				
Vanderstock, Geoff (USA) (1	time	5.9	9.7	13.8	17.8	21.8	23.7	25.9	30.2	34.5	38.9	43.5		49.0	3 / 4			
reaction time	interval		3.8	4.1	4.0	4.0		4.1	4.3	4.3	4.4	4.6	5.5	(49.07)		11.90	12.40	13.30
	velocity	7.63	9.21	8.54	8.75	8.75	8.44	8.54	8.14	8.14	7.95	7.61	7.27	8.16		8.82	8.47	7.89
H1 lead leg R	strides	21	15	15	15	15		15	15	15	15	15	18.7	174.7				
Skomorokhov, Vyacheslav (L	time	6.1	9.9	13.7	17.5	21.5	23.4	25.6	30.0	34.6	39.2	43.8		49.1	5 / 5			
reaction time	interval		3.8	3.8	3.8	4.0		4.1	4.4	4.6	4.6	4.6	5.3	(49.12)		11.40	12.50	13.80
	velocity	7.38	9.21	9.21	9.21	8.75	8.55	8.54	7.95	7.61	7.61	7.61	7.55	8.15		9.21	8.40	7.61
H1 lead leg L	strides	21	13	13	13	13		13	15	15	15	15	18	164				
Whitney, Ron (USA) (1942)	time	6.1	10.3	14.2	18.2	22.4	24.3	26.6	30.8	35.1	39.5	44.0		49.2	7 / 6			
reaction time	interval		4.2	3.9	4.0	4.2		4.2	4.2	4.3	4.4	4.5	5.2	(49.27)		12.10	12.60	13.20
	velocity	7.38	8.33	8.97	8.75	8.33	8.23	8.33	8.33	8.14	7.95	7.78	7.69	8.13		8.68	8.33	7.95
H1 lead leg R	strides	21	13	13	13	13		13	13	15	15	15		144				
Schubert, Rainer (FRG) (194	time	6.0	9.8	13.7	17.7	21.8	23.7	25.9	30.3	34.8	39.3	44.0		49.2	1 / 7			
reaction time	interval		3.8	3.9	4.0	4.1		4.1	4.4	4.5	4.5	4.7	5.2	(49.30)		11.70	12.60	13.70
	velocity	7.50	9.21	8.97	8.75	8.54	8.44	8.54	7.95	7.78	7.78	7.45	7.69	8.13		8.97	8.33	7.66
H1 lead leg L	strides	21	13	13	13	13		13	15	15	15	15	17.2	163.2				
Frinolli, Roberto (ITA) (1940)	time	5.8	9.7	13.6	17.5	21.5	23.4	25.6	29.9	34.3	38.9	43.9		50.1	4 / 8			
reaction time	interval		3.9	3.9	3.9	4.0		4.1	4.3	4.4	4.6	5.0	6.2	(50.13)		11.70	12.40	14.00
	velocity	7.76	8.97	8.97	8.97	8.75	8.55	8.54	8.14	7.95	7.61	7.00	6.45	7.98		8.97	8.47	7.50
H1 lead leg L	strides	22	15	15	15	15		15	15	15	15	15		157				

Semi-Final 2

date 14-Oct-68

Jonath (1969) - wie gerhard hennige trainiert

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hennige, Gerhard (FRG) (19	time	6.1	9.9	13.7	17.7	21.9	23.6	26.0	30.3	34.6	39.0	43.6		49.1	/ 1			
reaction time	interval		3.8	3.8	4.0	4.2		4.1	4.3	4.3	4.4	4.6	5.5	(49.16)		11.60	12.60	13.30
	velocity	7.38	9.21	9.21	8.75	8.33	8.47	8.54	8.14	8.14	7.95	7.61	7.27	8.15		9.05	8.33	7.89
H1 lead leg	strides																	

Semi-Final 1

date 14-Oct-68

Jonath (1969) - wie gerhard hennige trainiert

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Schubert, Rainer (FRG) (194	time	6.0	9.9	13.8	17.7	21.8	23.5	26.0	30.3	34.8	39.2	43.7		49.3	/ 4			
reaction time	interval		3.9	3.9	3.9	4.1		4.2	4.3	4.5	4.4	4.5	5.6	(49.38)		11.70	12.60	13.40
	velocity	7.50	8.97	8.97	8.97	8.54	8.51	8.33	8.14	7.78	7.95	7.78	7.14	8.11		8.97	8.33	7.84
H1 lead leg	strides																	

Heat 4

date 13-Oct-68

Jonath (1969) - wie gerhard hennige trainiert

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Frinolli, Roberto (ITA) (1940)	time	6.0	10.0	14.2	18.2	22.2	23.8	26.6	30.7	35.1	39.4	44.0		49.9	/ 1			
reaction time	interval		4.0	4.2	4.0	4.0		4.4	4.1	4.4	4.3	4.6	5.9	(49.95)		12.20	12.50	13.30
	velocity	7.50	8.75	8.33	8.75	8.75	8.40	7.95	8.54	7.95	8.14	7.61	6.78	8.02		8.61	8.40	7.89
H1 lead leg	strides																	
Hemery, David (GBR) (1944)	time	6.0	10.0	14.0	18.1	22.2	23.7	26.7	30.8	35.0	39.5	44.1		50.3	/ 2			
reaction time	interval		4.0	4.0	4.1	4.1		4.5	4.1	4.2	4.5	4.6	6.2	(50.33)		12.10	12.70	13.30
	velocity	7.50	8.75	8.75	8.54	8.54	8.44	7.78	8.54	8.33	7.78	7.61	6.45	7.95		8.68	8.27	7.89
H1 lead leg	strides																	

Heat 3

date 13-Oct-68

Jonath (1969) - wie gerhard hennige trainiert

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Whitney, Ron (USA) (1942)	time	6.1	10.0	13.9	18.1	22.2	23.8	26.3	30.9	35.2	39.5	44.0		49.0	/ 1			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time	interval		3.9	3.9	4.2	4.1		4.1	4.6	4.3	4.3	4.5	5.0	OR		12.00	12.80	13.10
	velocity	7.38	8.97	8.97	8.33	8.54	8.40	8.54	7.61	8.14	8.14	7.78	8.00	8.16	*(49.06)*	8.75	8.20	8.02
H1 lead leg	strides																	
Schubert, Rainer (FRG) (194	time	6.1	9.9	13.7	17.7	21.7	23.4	26.0	30.4	34.8	39.1	43.6		49.1	/ 2			
reaction time	interval		3.8	3.8	4.0	4.0		4.3	4.4	4.4	4.3	4.5	5.5	PB		11.60	12.70	13.20
	velocity	7.38	9.21	9.21	8.75	8.75	8.55	8.14	7.95	7.95	8.14	7.78	7.27	8.15	*(49.15)*	9.05	8.27	7.95
H1 lead leg	strides																	

Heat 2

date 13-Oct-68

Jonath (1969) - wie gerhard hennige trainiert

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Dyrzka, Juan Carlos (ARG) (	time	6.1	10.0	14.0	17.9	21.9	23.6	26.1	30.5	35.0	39.5	44.2		49.8	/ 1			
reaction time	interval		3.9	4.0	3.9	4.0		4.2	4.4	4.5	4.5	4.7	5.6	NR		11.80	12.60	13.70
	velocity	7.38	8.97	8.75	8.97	8.75	8.47	8.33	7.95	7.78	7.78	7.45	7.14	8.03	*(49.82)*	8.90	8.33	7.66
H1 lead leg	strides																	

Heat 1

date 13-Oct-68

Jonath (1969) - wie gerhard hennige trainiert

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hennige, Gerhard (FRG) (19	time	5.9	9.8	13.6	17.6	21.8	23.5	25.8	30.0	34.5	39.1	43.5		49.5	/ 1			
reaction time	interval		3.9	3.8	4.0	4.2		4.0	4.2	4.5	4.6	4.4	6.0	*(49.57)*		11.70	12.40	13.50
	velocity	7.63	8.97	9.21	8.75	8.33	8.51	8.75	8.33	7.78	7.61	7.95	6.67	8.08		8.97	8.47	7.78
H1 lead leg	strides																	

1967 (Leninakan, URS) (Altitude)

Heat ??

date 02-Oct-67

Jonath (1969) - wie gerhard hennige trainiert

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Skomorokhov, Vyacheslav (L	time	5.8	10.0	13.9	18.1	22.2		26.6	31.1	35.6	40.1	44.7		50.1	/ 1			
reaction time	interval		4.2	3.9	4.2	4.1		4.4	4.5	4.5	4.5	4.6	5.4			12.3	13.0	13.6
	velocity	7.76	8.33	8.97	8.33	8.54		7.95	7.78	7.78	7.78	7.61	7.41	7.98		8.54	8.08	7.72
H1 lead leg	strides																	

1964 Olympic Games (Tokyo, JPN)

FINAL

date 16-Oct-64

Breitschaft (1965) - die leichtathletik wettkampfe der 1964 olympischen sommerspielen - 400m hürdenlauf

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Cawley, Rex (USA) (1940)	time	5.9		13.8		21.8			30.3		38.9			49.6	6 / 1			
reaction time	interval			7.9		8.0			8.5		8.6		10.7					
	velocity	7.63		8.86		8.75			8.24		8.14		7.01	8.06				
H1 lead leg	strides																	
Cooper, John (GBR) (1940)	time	5.8		13.8		22.0			30.8		40.0			50.1	4 / 2			
reaction time	interval			8.0		8.2			8.8		9.2		10.1					
	velocity	7.76		8.75		8.54			7.95		7.61		7.43	7.98				
H1 lead leg	strides																	
Morale, Salvatore (ITA) (1938	time	5.8		13.8		22.0			30.8		40.0			50.1	8 / 3			
reaction time	interval			8.0		8.2			8.8		9.2		10.1					
	velocity	7.76		8.75		8.54			7.95		7.61		7.43	7.98				
H1 lead leg	strides																	
Knoke, Gary (AUS) (1942)	time	5.8		13.7		21.8			30.6		40.1			50.4	2 / 4			
reaction time	interval			7.9		8.1			8.8		9.5		10.3					
	velocity	7.76		8.86		8.64			7.95		7.37		7.28	7.94				
H1 lead leg	strides																	
Luck, Jay (USA) (1940)	time	5.7		13.8		22.0			30.5		39.6			50.5	3 / 5			
reaction time	interval			8.1		8.2			8.5		9.1		10.9					
	velocity	7.89		8.64		8.54			8.24		7.69		6.88	7.92				
H1 lead leg	strides																	
Frinolli, Roberto (ITA) (1940)	time	5.8		13.4		21.0			29.8		39.0			50.7	7 / 6			
reaction time	interval			7.6		7.6			8.8		9.2		11.7					
	velocity	7.76		9.21		9.21			7.95		7.61		6.41	7.89				
H1 lead leg	strides																	
Anisimov, Vasiliy (URS) (1938)	no information available													51.1	1 / 7			
Geeroms, Wilfried (BEL) (1941)	no information available													51.4	5 / 8			

1962 European Championships (Belgrad, YUG)

FINAL

date 14-Sep-62

Nett (1964) - Training des leichtathleten: Hürdenlauf, sprung, wurf, mehrkampf

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Morale, Salvatore (ITA) (1938	time	6.0	9.9	14.0	18.0	22.1	23.9	26.4	30.8	35.2	39.5	44.1		49.2	/ 1			
reaction time	interval		3.9	4.1	4.0	4.1		4.3	4.4	4.4	4.3	4.6	5.1	=WR		12.0	12.8	13.3
	velocity	7.50	8.97	8.54	8.75	8.54	8.37	8.14	7.95	7.95	8.14	7.61	7.84	8.13		8.75	8.20	7.89
H1 lead leg	strides		15	15	15	15		15	15	15	15	15						
Neumann, Jörg (FRG) (1941)	no information available													50.3	/ 2			
Janz, Helmut (FRG) (1934)	no information available													50.5	/ 3			
Rintamaki, Jussi (FIN) (1935)	no information available													50.8	/ 4			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Kryunov, Boris (URS) (1935)	no information available	51.3	/ 5	
Anisimov, Vasiliy (URS) (1938)	no information available	54.2	/ 6	

1961 International Fall Meeting (Rome, ITA)

FINAL

date 15-Oct-09

Nett (1964) - Training des leichtathleten: Hürdenlauf, sprung, wurf, mehrkampf

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Morale, Salvatore (ITA) (1938	time	5.8	9.8	13.8	17.8	21.8	23.4	26.0	30.2	34.6	39.6	44.4		49.7	6 / 1			
reaction time	interval		4.0	4.0	4.0	4.0		4.2	4.2	4.4	5.0	4.8	5.3	AR		12.0	12.4	14.2
	velocity	7.76	8.75	8.75	8.75	8.75	8.55	8.33	8.33	7.95	7.00	7.29	7.55	8.05	*(50.1y)*	8.75	8.47	7.39
H1 lead leg	strides																	

1961 Universiade (Sofia, BUL)

Bartusek (1969) - 400-meter training and technique

FINAL

date 01-Sep-61

Nett (1964) - Training des leichtathleten: Hürdenlauf, sprung, wurf, mehrkampf

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Morale, Salvatore (ITA) (1938	time	5.8	9.8	13.9	18.2	22.5		26.8	31.1	35.5	40.0	44.7		50.0	/ 1			*Nett (1964)*
reaction time	interval		4.0	4.1	4.3	4.3		4.3	4.3	4.4	4.5	4.7	5.3	NR		12.4	12.9	13.6
	velocity	7.76	8.75	8.54	8.14	8.14		8.14	8.14	7.95	7.78	7.45	7.55	8.00		8.47	8.14	7.72
H1 lead leg	strides																	
Chevychalov, Georgiy (URS)	time	5.8	10.1	14.1	18.1	22.4		26.9	31.5	36.0	40.6	45.8		51.7	/ 2			*Bartusek (1969)*
reaction time	interval		4.3	4.0	4.0	4.3		4.5	4.6	4.5	4.6	5.2	5.9			12.3	13.4	14.3
	velocity	7.76	8.14	8.75	8.75	8.14		7.78	7.61	7.78	7.61	6.73	6.78	7.74		8.54	7.84	7.34
H1 lead leg	strides																	

1960 Olympic Games (Rome, ITA)

FINAL

date 02-Sep-60

Nett (1964) - Training des leichtathleten: Hürdenlauf, sprung, wurf, mehrkampf

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Davis, Glenn (USA) (1934)	time	5.9	9.9	14.0	18.2	22.4	24.0	26.7	31.1	35.6	40.0	44.5		49.3	6 / 1			
reaction time	interval		4.0	4.1	4.2	4.2		4.3	4.4	4.5	4.4	4.5	4.8	OR		12.3	12.9	13.4
	velocity	7.63	8.75	8.54	8.33	8.33	8.33	8.14	7.95	7.78	7.95	7.78	8.33	8.11	*(49.51)*	8.54	8.14	7.84
H1 lead leg	strides																	

Ulrich (1960) - der 400m-hürdenlauf in Rom (200m times)

Cushman, Cliff (USA) (1938)	24.5	49.6	5 / 2	(49.77)
Howard, Dick (USA) (1935)	24.1	49.7	1 / 3	(49.90)
Janz, Helmut (EUA/FRG) (1934)	23.9	49.9	2 / 4	(50.05)
Rintämaki, Jussi (FIN) (1935)	24.5	50.8	4 / 5	(50.98)
Galliker, Bruno (SUI) (1931)	24.3	51.0	3 / 6	(51.11)

Semi-Final 2

date 01-Sep-60

Ulrich (1960) - der 400m-hürdenlauf in Rom (200m times)

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Cushman, Cliff (USA) (1938)						25.2							50.8	/ 1	(50.89)		
Howard, Dick (USA) (1935)						24.3							50.8	/ 2	(50.91)		
Galliker, Bruno (SUI) (1931)						24.7							51.3	/ 3	(51.47)		
Morale, Salvatore (ITA) (1938)													51.3	/ 4	(51.48)		
Rotich, Bartonjo (KEN) (1938)						23.9							51.8	/ 5	(51.97)		
Matthias, Willi (EUA/FRG) (1936)						24.4							51.8	/ 6	(51.95)		
Metcalf, John (GBR) (1934)													52.5	/ 7	(52.72)		

Semi-Final 1

date 01-Sep-60

Ulrich (1960) - der 400m-hürdenlauf in Rom (200m times)

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Davis, Glenn (USA) (1934)						24.1							51.1	/ 1	(51.20)		
Rintämaki, Jussi (FIN) (1935)						24.6							51.1	/ 2	(51.20)		
Janz, Helmut (EUA/FRG) (1934)						23.9							51.4	/ 3	(51.55)		
Chevychalov, Georgiy (URS) (1938)													52.0	/ 4	(52.14)		
Catola, Elio (ITA) (1935)													52.3	/ 5	(52.44)		
Gulbrandsen, Jan (NOR) (1938)						24.2							52.4	/ 6	(52.56)		
Martini, Moreno (ITA) (1935)													52.4	/ 7	(52.57)		

1956 Olympic Games (Melbourne, AUS)

FINAL

date 24-Nov-56

Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)

			H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Davis, Glenn (USA) (1934)		time					22.7								50.1	4 / 1			
reaction time		interval													=OR				
		velocity					8.15								7.98	*(50.29)*			
H1 lead leg	L	strides	22	15	15	15	15		15	15	15	15	15	19	176				
Southern, Eddie (USA) (1938		time					22.5								50.8	2 / 2			
reaction time		interval													*(50.94)*				
		velocity					8.22								7.87				
H1 lead leg	R	strides	22	15	15	13	15		15	15	15	15	15	18	173				

Culbreath, Josh (USA) (1932)	no information available	51.6	1 / 3	(51.74)
Lituyev, Yury (URS) (1925)	no information available	51.7	5 / 4	(51.91)
Lean, David (AUS) (1935)	no information available	51.8	6 / 3	(51.93)
Potgieter, Gert (RSA) (1937)	no information available	56.0	3 / 6	

1953 Hungary vs. USSR (Budapest, HUN)

FINAL

date 20-Sep-53

Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Lituyev, Yury (URS) (1925)	time						23.5							50.4	/ 1			
reaction time	interval											26.9		WR				
	velocity						8.51					7.43		7.94				
H1 lead leg	strides		13	13	13	13		13	13	13	15	15		121				

1952 Olympic Games (Helsinki, FIN)

FINAL date 21-Jul-52

Mitchell (1967) - future of the one-lap hurdles

		H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Moore, Charlie (USA) (1929)	time	6.2	10.3	14.4	18.6	22.7		27.3	31.9	36.5	41.1	45.4		50.8	6 / 1			
reaction time	interval		4.1	4.1	4.2	4.1		4.6	4.6	4.6	4.6	4.3	5.4	=OR		12.4	13.3	13.5
	velocity	7.26	8.54	8.54	8.33	8.54		7.61	7.61	7.61	7.61	8.14	7.41	7.87	*(51.06)*	8.47	7.89	7.78
H1 lead leg	strides																	
Lituyev, Yury (URS) (1925)	no information available													51.3	1 / 2	(51.51)		
Holland, John (NZL) (1926)	no information available													52.2	3 / 3	(52.26)		
Yulin, Anatoly (URS) (1929)	no information available													52.8	2 / 4	(52.81)		
Whittle, Harry (GBR) (1922)	no information available													53.1	5 / 5	(53.36)		
Filiput, Armando (ITA) (1923)	no information available													54.4	4 / 6	(54.49)		

1948 Olympic Games (London, GBR)

FINAL date 31-Jul-48

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Cochran, Roy (USA) (1919)	no information available											OR	51.1	3 / 1			
White, Duncan (SRI) (1918)	no information available												51.8	5 / 2			
Larsson, Rune (SWE) (1924)	no information available												51.2	6 / 3			
Ault, Dick (USA) (1925)	no information available												52.4	4 / 4			
Cros, Yves (FRA) (1923)	no information available												53.3	1 / 5			
Missoni, Ottavio (ITA) (1921)	no information available												54.0	2 / 6			

1936 Olympic Games (Berlin, GER)

FINAL date 04-Aug-36

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hardin, Glenn (USA) (1910)	no information available												52.4	6 / 1			
Loaring, John (CAN) (1915)	no information available												52.7	3 / 2			
White, Miguel (PHI) (1909)	no information available												52.8	5 / 3			
Patterson, Joseph (USA) (1912)	no information available												53.0	1 / 4			
Padilha, Sylvio (BRA) (1909)	no information available												54.0	4 / 5			
Mantikas, Hristos (GRE) (1902)	no information available												54.2	2 / 6			

1932 Olympic Games (Los Angeles, CA)

FINAL date 01-Aug-32

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tisdall, Bob (IRL) (1907)	no information available								*(knocked down hurdle)*			~~WR~~	51.7	3 / 1			
Hardin, Glenn (USA) (1910)	no information available											WR	51.9	6 / 2			
Taylor, Morgan (USA) (1903)	no information available												52.0	4 / 3			
Burghley, Lord David (GBR) (1905)	no information available												52.2	5 / 4			
Facelli, Luigi (ITA) (1898)	no information available												53.0	2 / 5			
Areskoug, Kjell (SWE) (1906)	no information available												54.6	1 / 6			

1928 Olympic Games (Amsterdam, NED)

FINAL date 30-Jul-28

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Burghley, Lord David (GBR) (1905)	no information available											=OR	53.4	5 / 1			
Cuhel, Frank (USA) (1904)	no information available												53.6e	1 / 2			
Taylor, Morgan (USA) (1903)	no information available												53.6e	3 / 3			
Pettersson, Sten (SWE) (1902)	no information available												53.8e	2 / 4			
Livingstone-Learmonth, Tom (GBR) (19	no information available												54.2e	6 / 5			
Facelli, Luigi (ITA) (1898)	no information available												55.8e	4 / 6			

1924 Olympic Games (Paris, FRA)

FINAL date 07-Jul-24

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Taylor, Morgan (USA) (1903)	no information available							*(knocked down hurdle 10)*				~~WR OR~~	52.6	1 / 1			
Brookins, Charles (USA) (1899)	no information available											DQ	53.5e	5 / ~~2~~			
Wilén, Erik (FIN) (1898)	no information available											OR	53.8	5 / ~~3~~ 2			
Riley, Ivan (USA) (1900)	no information available												54.2	4 / ~~4~~ 3			
Blackett, Frederick (GBR) (1900)	no information available											DQ	56.0e	6 / ~~5~~			
André, Géo (FRA) (1889)	no information available												56.2	3 / ~~6~~ 4			

1920 Olympic Games (Antwerp, BEL)

FINAL date 16-Aug-20

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Loomis, Frank (USA) (1896)	no information available											WR	54.0	3 / 1			
Norton, John (USA) (1893)	no information available												54.6e	5 / 2			
Desch, August (USA) (1898)	no information available												54.7e	2 / 3			
André, Géo (FRA) (1889)	no information available												54.8e	4 / 4			

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Christiernsson, Carl-Axel (SWE) (1898)	no information available	55.4e	1 / 5
Daggs, Charles (USA) (1901)	no information available	57.5e	6 / 6

1908 Olympic Games (London, GBR) (587yd Track)

FINAL date 22-Jul-08

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Bacon, Charles (USA) (1885)	no information available											WR	55.0	4 / 1			
Hillman, Harry (USA) (1881)	no information available												55.3e	3 / 2			
Tremeer, Jimmy (GBR) (1874)	no information available												57.0e	2 / 3			
Burton, Leslie (GBR) (1882)	no information available												58.0e	1 / 4			

1904 Olympic Games (St. Louis, MO) (76.2cm)

FINAL date 31-Aug-04

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Hillman, Harry (USA) (1881)	no information available												53.0	4 / 1			
Waller, Frank (USA) (1884)	no information available												53.2e	2 / 2			
Poage, George (USA) (1880)	no information available												58.4e	1 / 3			
Varnell, George (USA) (1882)	no information available													3 / 4			

1900 Olympic Games (Paris, FRA) (500m Grass Track)

FINAL date 15-Jul-00

	H1	H2	H3	H4	H5	200m	H6	H7	H8	H9	H10	Run-In	Official Time	Lane / Place	H1-H4	H4-H7	H7-H10
Tewksbury, Walter (USA) (1876)	no information available											OR	57.6	/ 1			
Tauzin, Henri (FRA) (1879)	no information available												58.3e	/ 2			
Orton, George (CAN) (1873)	no information available												58.9e	/ 3			

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