

Supplementary Material: Raw data of the study.

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Table S1. Maximal height (h_{peak}) and length (L) of the second flight phase of all performed vaults in this study, assessed by 3D motion capture (3D) and 2D video analysis (first-time assessor: 2D₁ and 2D₂; experienced assessor: 2D_e).

Athlete	Gender	Level	Official Vault Nr.	h_{peak} (3D) [m]	h_{peak} (2D ₁) [m]	h_{peak} (2D ₂) [m]	h_{peak} (2D _e) [m]	L (3D) [m]	L (2D ₁) [m]	L (2D ₂) [m]	L (2D _e) [m]	x-axis displacement [m]
1	m	elite	225	2.77	2.70	2.69	2.70	2.18	2.03	2.06	2.06	-0.03
1	m	elite	270	2.71	2.67	2.69	2.68	2.23	2.09	2.11	2.10	-0.10
2	m	elite	270	2.93	2.94	2.93	2.92	3.04	2.85	2.85	2.87	-0.10
2	m	elite	274	3.03	3.05	3.05	3.00	3.10	2.94	2.93	2.94	-0.14
3	m	elite	374	2.80	2.75	2.76	2.76	2.25	2.03	2.03	2.03	0.08
3	m	elite	374	2.91	2.88	2.88	2.86	2.27	2.27	2.30	2.22	0.17
4	m	elite	275	2.83	2.92	2.94	2.91	2.37	2.54	2.53	2.55	0.29
5	m	elite	227	2.83	2.81	2.82	2.86	2.99	3.09	2.98	2.98	-0.18
5	m	elite	272	2.76	2.74	2.74	2.74	2.97	3.03	2.91	3.09	-0.13
6	m	elite	371	2.73	2.81	2.78	2.78	3.16	3.16	3.18	3.20	0.15
6	m	elite	375	2.86	2.96	2.93	2.92	3.13	3.20	3.23	3.24	0.09
7	m	elite	272	2.77	2.90	2.86	2.85	1.90	1.96	1.96	1.98	0.37
8	m	elite	179	3.16	3.09	3.11	3.05	1.78	1.99	1.92	1.99	0.16
9	m	elite	374	3.09	3.15	3.14	3.14	2.03	1.95	1.90	1.95	-0.03
9	m	elite	376	3.10	3.14	3.12	3.12	2.06	1.95	1.96	1.97	-0.27
9	m	elite	173	3.05	3.04	3.01	3.03	2.94	3.02	3.02	3.05	0.19
9	m	elite	173	3.05	3.09	3.08	3.12	3.05	3.12	3.12	3.15	0.32
10	f	elite	320	2.18	2.34	2.30	2.26	1.60	1.56	1.59	1.58	-0.04
10	f	elite	330	2.33	2.31	2.28	2.25	1.94	1.94	1.92	1.94	-0.03
11	f	elite	432	2.48	2.53	2.48	2.48	2.54	2.33	2.32	2.29	-0.08
12	f	elite	430	2.42	2.53	2.52	2.48	1.88	1.88	1.89	1.87	-0.05
12	f	elite	432	2.51	2.49	2.47	2.46	2.37	2.39	2.42	2.38	0.09
13	f	elite	430	2.41	2.42	2.42	2.43	1.68	1.63	1.63	1.58	-0.06
13	f	elite	430	2.43	2.45	2.43	2.46	1.41	1.33	1.40	1.30	-0.13
14	f	elite	432	2.60	2.51	2.50	2.55	1.85	1.75	1.78	1.78	-0.06
14	f	elite	432	2.53	2.51	2.54	2.55	2.07	2.04	2.05	2.04	0.24

Athlete	Gender	Level	Official Vault Nr.	h_{peak} (3D) [m]	h_{peak} (2D ₁) [m]	h_{peak} (2D ₂) [m]	h_{peak} (2D _e) [m]	L (3D) [m]	L (2D ₁) [m]	L (2D ₂) [m]	L (2D _e) [m]	x-axis displacement [m]
15	m	junior	430	2.72	2.81	2.82	2.82	2.42	2.54	2.55	2.49	0.43
15	m	junior	432	2.83	2.93	2.93	2.91	2.38	2.58	2.53	2.53	0.59
16	m	junior	274	2.67	2.68	2.70	2.72	2.16	2.10	2.11	2.11	-0.02
17	m	junior	272	2.50	2.47	2.52	2.53	2.04	1.97	1.95	1.94	-0.27
18	m	junior	374	2.88	2.92	3.00	2.97	2.13	2.00	1.99	1.98	-0.38
18	m	junior	375	3.00	3.08	3.11	3.11	1.66	1.73	1.68	1.74	-0.31
19	m	junior	374	2.70	2.70	2.73	2.73	2.62	2.67	2.65	2.67	0.00
20	m	junior	272	2.61	2.64	2.67	2.67	1.61	1.62	1.58	1.59	0.14
20	m	junior	274	2.64	2.70	2.70	2.68	1.88	1.90	1.88	1.84	0.45
21	m	junior	272	2.77	2.71	2.74	2.71	2.74	2.81	2.76	2.83	0.24
21	m	junior	274	2.84	2.79	2.79	2.79	2.51	2.53	2.52	2.55	0.29
22	m	junior	272	2.43	2.45	2.47	2.48	2.07	1.95	1.92	1.90	-0.16