KETTLEBELL THROW COMBINED EVENTS REGULATION

1. EVENTS

1.1. Long jump from the spot (Fig.1).

1.2. Kettlebell put from the breast with both hands from the support (the turn in respect of longitudinal body axis is not allowed, Fig.2).

1.3. Kettlebell throw over the head with both hands from the support (sportsman's back looks to the direction of the throw, Fig.3).

1.4. Kettlebell throw from the side with both hands (the throw is executed from a plane surface, the line between sportsman feet must be perpendicular to the direction of the throw, Fig.4).

1.5. Kettlebell throw from the bottom with both hands from the support (Fig.5).

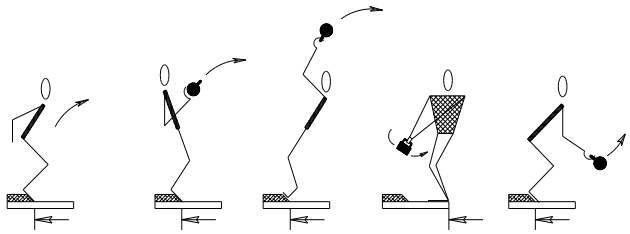


Fig. 1 Fig. 2 Fig. 3 Fig. 4 Fig. 5

2. AGE GROUPS AND MASS OF KETTLEBELLS

Men		Women	
Age group	Mass (kg)	Age group	Mass (kg)
<30	16	<30	10
M30	16	W30	10
M35	16	W35	10
M40	14	W40	8
M45	14	W45	8
M50	12	W50	6
M55	12	W55	6
M60	10	W60	4
M65	10	W65	4
>70	8	>70	4

Note. The choice of kettlebell is free except for two limitations: first, the hand grip must be rigid, second, the distance from the bottom of the hand grip to the centre of kettlebell mass (the mass of grip must be included) must be equal or less than 13 cm (such is the distance of standard russian 16 kg kettlebell); the standard kettlebell and it's analogue are presented in Fig. 6.

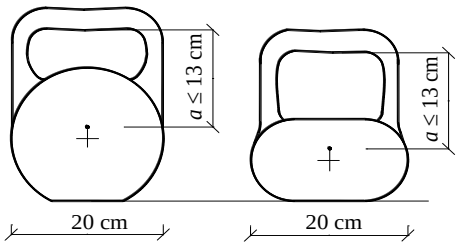


Fig. 6

3. CONDITIONS OF THE COMPETITION

3.1. Jumping and throwing must be executed from the special platform (Fig. 1-5), i.e. from a wooden shield with a squared beam fixed across. The measurements of the shield and the squared beam must be convenient for the athletes to jump or to throw.

3.2. A long jump sector has to be used for jumping, whereas for throwing events a special sector on a field has to be used, i.e. a sector limited by two parallel ribbons at a distance of 5 metres from each other (the throwing platform is fixed in the axis of the sector). Usually all pentathlon events are carried out on a long jump sector.

3.3. All competitors have the right to one attempt in each event.

3.4. Three register jumps or throws must be executed one at a time. By way of exception the head referee can allow the competitors to execute all three-register attempts at a time.

3.5. Each register jump or throw is measured (in Fig.1-5 the pointer shows the point which indicates the beginning of the result fixing).

3.6. Overstepping is permitted after the throw.

3.7. The head referee has the right to fix the succession of events execution.

4. DETERMINATION OF WINNERS

4.1. The organiser of the competition can execute a ***pentathlon*** competition (long jump result multiplied by three plus four throw results), a ***tetrathlon*** competition (all throw events), a ***triathlon competition*** (kettlebell throw over the head, from the side and from below) and a ***"Strongman"*** competition (all throw events throwing all kettlebells: man throws kettlebells of five masses, woman throws kettlebells of four masses).

4.2. The winner is the competitor, whose sum of his evaluated results (in separate kind of competition) is the largest in meters. The evaluated result of each event is equal to the achieved result multiplied by a yearly age coefficient. If the sum of two or more competitors' results is the same, the priority is given to senior competitors.

4.3. The organiser of the competition can establish the winner in each classic "five years" age group (not in common register).

4.4. In a team register the winner and prize-winners are established according to the regulations of the competition organiser.

5. YEARLY AGES COEFFICIENTS

5.1. Yearly age coefficients are determined using the exponential functions.

Formulas for determining yearly age coefficients for jump

Men	Women
$k = e^{(-0.1142)+0.0006922 \cdot m^{1.5}}$	$k = e^{(-0.1232)+0.0007471 \cdot m^{1.5}}$

Formulas for determining yearly age coefficients for throws (pentathlon, tetrathlon, triathlon)

Men	Women
$k = A \cdot e^{(-0.07582)+0.00001548 \cdot m^{2.5}}$	$k = A \cdot e^{(-0.08116)+0.00001638 \cdot m^{2.5}}$
if $m \le 39$, then A=1.0000, if $40 \le m \le 49$, then A=0.9009, if $50 \le m \le 59$, then A=0.8102, if $60 \le m \le 69$, then A=0.7273, if $m \ge 70$, then A=0.6517.	if $m \le 39$, then A=1.0000, if $40 \le m \le 49$, then A=0.8961, if $50 \le m \le 59$, then A=0.8015, if $m \ge 60$, then A=0.7156.

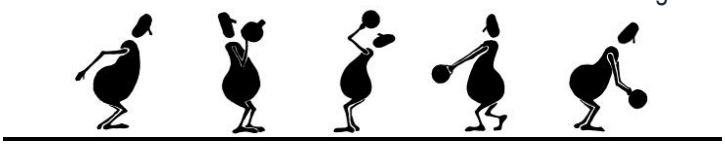
Formulas for determining yearly age coefficients for throws ("Strongman")

Men	Women
$k = A \cdot e^{(-0.07582)+0.00001548 \cdot m^{2.5}}$	$k = A \cdot e^{(-0.08116)+0.00001638 \cdot m^{2.5}}$
if $m = 16\,\mathrm{kg}$, then A=1.0000, if $m = 14\,\mathrm{kg}$, then A=0.9009, if $m = 12\,\mathrm{kg}$, then A=0.8102, if $m = 10\,\mathrm{kg}$, then A=0.7273, if $m = 8\,\mathrm{kg}$, then A=0.6517.	if $m = 10\,\mathrm{kg}$, then A=1.0000, if $m = 8\,\mathrm{kg}$, then A=0.8961, if $m = 6\,\mathrm{kg}$, then A=0.8015, if $m = 4\,\mathrm{kg}$, then A=0.7156.

In the *tables k* is the yearly age coefficient, *A* is the coefficient which evaluates the increase of result (decrease of yearly age coefficient) when the mass of kettlebell is changing, *m* is the age of the athlete (in years) at the time of sport event (it is calculated by deducting athlete's birth day from the first day of the competition).

5.2. Yearly age coefficients are presented in the tables. Their meanings are rounded to four significant numbers. These rounded meanings should be used on computer programs; otherwise the results calculated using the formula given and results presented in the table will slightly differ.

Author of regulation – dr. Kęstutis Vislavičius



Tables. Yearly age coefficients

Men							
Pentathlon		Age	"Strongman"				
jump	throws		16kg	14kg	12kg	10kg	8kg
1.000	1.000	30	1.000	0.901	0.811	0.728	0.652
1.005	1.007	31	1.007	0.907	0.816	0.732	0.656
1.011	1.014	32	1.014	0.913	0.821	0.737	0.661
1.017	1.021	33	1.021	0.920	0.827	0.743	0.666
1.023	1.029	34	1.029	0.927	0.834	0.748	0.671
1.030	1.037	35	1.037	0.934	0.840	0.754	0.676
1.036	1.046	36	1.046	0.942	0.847	0.760	0.681
1.042	1.055	37	1.055	0.950	0.854	0.767	0.687
1.049	1.064	38	1.064	0.958	0.862	0.774	0.693
1.056	1.074	39	1.074	0.967	0.870	0.781	0.700
1.063	0.977	40	1.084	0.977	0.878	0.789	0.707
1.070	0.987	41	1.095	0.987	0.887	0.796	0.714
1.077	0.997	42	1.106	0.997	0.896	0.805	0.721
1.084	1.008	43	1.118	1.008	0.906	0.813	0.729
1.092	1.019	44	1.131	1.019	0.916	0.822	0.737
1.099	1.031	45	1.144	1.031	0.927	0.832	0.745
1.107	1.043	46	1.158	1.043	0.938	0.842	0.754
1.115	1.056	47	1.172	1.056	0.949	0.852	0.764
1.123	1.069	48	1.187	1.069	0.962	0.863	0.773
1.131	1.083	49	1.202	1.083	0.974	0.875	0.784
1.139	0.987	50	1.219	1.098	0.987	0.886	0.794
1.148	1.001	51	1.236	1.113	1.001	0.899	0.805
1.156	1.016	52	1.254	1.129	1.016	0.912	0.817
1.165	1.031	53	1.272	1.146	1.031	0.925	0.829
1.174	1.046	54	1.292	1.164	1.046	0.939	0.842
1.183	1.063	55	1.312	1.182	1.063	0.954	0.855
1.192	1.080	56	1.333	1.201	1.080	0.970	0.869
1.202	1.098	57	1.355	1.221	1.098	0.986	0.883
1.211	1.117	58	1.378	1.242	1.117	1.002	0.898
1.221	1.136	59	1.402	1.263	1.136	1.020	0.914
1.231	1.038	60	1.427	1.286	1.156	1.038	0.930
1.241	1.057	61	1.454	1.310	1.178	1.057	0.947
1.251	1.077	62	1.481	1.334	1.200	1.077	0.965
1.261	1.098	63	1.510	1.360	1.223	1.098	0.984
1.272	1.120	64	1.539	1.387	1.247	1.120	1.003
1.282	1.142	65	1.571	1.415	1.273	1.142	1.024
1.293	1.166	66	1.603	1.444	1.299	1.166	1.045
1.304	1.191	67	1.637	1.475	1.326	1.191	1.067
1.315	1.216	68	1.673	1.507	1.355	1.217	1.090
1.326	1.243	69	1.710	1.540	1.385	1.244	1.114
1.338	1.139	70	1.749	1.575	1.417	1.272	1.140
1.350	1.166	71	1.789	1.612	1.450	1.301	1.166
1.362	1.193	72	1.831	1.650	1.484	1.332	1.194
1.374	1.222	73	1.876	1.690	1.520	1.364	1.222
1.386	1.253	74	1.922	1.732	1.557	1.398	1.253
1.398	1.284	75	1.970	1.775	1.596	1.433	1.284
1.411	1.317	76	2.021	1.821	1.638	1.470	1.317
1.424	1.352	77	2.074	1.869	1.680	1.509	1.352
1.437	1.388	78	2.130	1.919	1.725	1.549	1.388
1.450	1.426	79	2.188	1.971	1.773	1.591	1.426
1.464	1.465	80	2.249	2.026	1.822	1.635	1.465
1.478	1.507	81	2.312	2.083	1.873	1.682	1.507
1.492	1.550	82	2.379	2.143	1.928	1.730	1.550
1.506	1.596	83	2.449	2.206	1.984	1.781	1.596
1.520	1.644	84	2.523	2.273	2.044	1.835	1.644
1.535	1.694	85	2.600	2.342	2.106	1.891	1.694
1.549	1.747	86	2.680	2.415	2.172	1.949	1.747
1.564	1.802	87	2.765	2.491	2.240	2.011	1.802
1.580	1.860	88	2.854	2.571	2.312	2.076	1.860
1.595	1.921	89	2.947	2.655	2.388	2.144	1.921
1.611	1.985	90	3.046	2.744	2.468	2.215	1.985

Women						
Pentathlon		Age	"Strongman"			
jump	throws		10kg	8kg	6kg	4kg
1.000	1.000	30	1.000	0.896	0.801	0.715
1.006	1.007	31	1.007	0.902	0.807	0.720
1.012	1.014	32	1.014	0.908	0.813	0.725
1.019	1.022	33	1.022	0.915	0.819	0.731
1.025	1.030	34	1.030	0.923	0.825	0.737
1.032	1.038	35	1.038	0.930	0.832	0.743
1.039	1.047	36	1.047	0.938	0.839	0.749
1.046	1.057	37	1.057	0.947	0.847	0.756
1.053	1.067	38	1.067	0.956	0.855	0.763
1.061	1.077	39	1.077	0.965	0.863	0.771
1.068	0.975	40	1.088	0.975	0.872	0.779
1.076	0.986	41	1.100	0.986	0.882	0.787
1.083	0.996	42	1.112	0.996	0.891	0.796
1.091	1.008	43	1.125	1.008	0.901	0.805
1.099	1.020	44	1.138	1.020	0.912	0.814
1.108	1.032	45	1.152	1.032	0.923	0.824
1.116	1.045	46	1.166	1.045	0.935	0.835
1.125	1.059	47	1.182	1.059	0.947	0.846
1.133	1.073	48	1.198	1.073	0.960	0.857
1.142	1.088	49	1.214	1.088	0.973	0.869
1.151	0.987	50	1.232	1.104	0.987	0.881
1.161	1.002	51	1.250	1.120	1.002	0.894
1.170	1.017	52	1.269	1.137	1.017	0.908
1.179	1.033	53	1.289	1.155	1.033	0.922
1.189	1.050	54	1.310	1.174	1.050	0.937
1.199	1.067	55	1.332	1.193	1.067	0.953
1.209	1.085	56	1.354	1.214	1.085	0.969
1.219	1.104	57	1.378	1.235	1.104	0.986
1.230	1.124	58	1.403	1.257	1.124	1.004
1.240	1.145	59	1.429	1.280	1.145	1.022
1.251	1.042	60	1.456	1.305	1.167	1.042
1.262	1.062	61	1.484	1.330	1.190	1.062
1.273	1.083	62	1.514	1.357	1.213	1.083
1.285	1.105	63	1.545	1.384	1.238	1.105
1.296	1.129	64	1.577	1.413	1.264	1.129
1.308	1.153	65	1.611	1.444	1.291	1.153
1.320	1.178	66	1.646	1.475	1.319	1.178
1.332	1.205	67	1.683	1.508	1.349	1.205
1.344	1.232	68	1.722	1.543	1.380	1.232
1.357	1.261	69	1.762	1.579	1.413	1.261
1.369	1.291	70	1.805	1.617	1.446	1.291
1.382	1.323	71	1.849	1.657	1.482	1.323
1.395	1.356	72	1.895	1.698	1.519	1.356
1.409	1.391	73	1.944	1.742	1.558	1.391
1.422	1.427	74	1.995	1.787	1.599	1.427
1.436	1.465	75	2.048	1.835	1.641	1.465
1.450	1.505	76	2.104	1.885	1.686	1.505
1.465	1.547	77	2.162	1.937	1.733	1.547
1.479	1.591	78	2.223	1.992	1.782	1.591
1.494	1.637	79	2.288	2.050	1.833	1.637
1.509	1.685	80	2.355	2.110	1.887	1.685
1.524	1.736	81	2.426	2.174	1.944	1.736
1.540	1.789	82	2.500	2.240	2.004	1.789
1.555	1.845	83	2.578	2.310	2.066	1.845
1.571	1.903	84	2.659	2.383	2.132	1.903
1.588	1.965	85	2.745	2.460	2.200	1.965
1.604	2.029	86	2.836	2.541	2.273	2.029
1.621	2.097	87	2.931	2.626	2.349	2.097
1.638	2.169	88	3.031	2.716	2.429	2.169
1.655	2.244	89	3.136	2.810	2.513	2.244
1.673	2.323	90	3.246	2.909	2.602	2.323