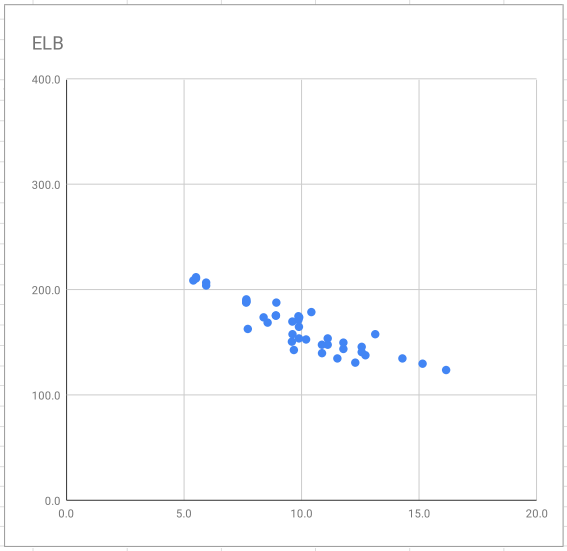
		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %		
The Great Warbow	http://ww	150	1485	9.9	174.0	0.90				135.3326747	
The Great Warbow		140	1250	8.9	188.0	0.95				132.9852355	
The Great Warbow		120	1250	10.4	179.0	1.00				120.5573769	
										0	gr
The Great Warbow	http://ww	150	827	5.5	210.9	0.74				110.7727481	
	pg 409	150	827	5.5	212.1	0.75				112.0167936	
	The Great	150	892	5.9	204.2	0.75				111.9922162	
		150	892	5.9	207.0	0.77				115.0350491	
		150	1148	7.7	188.6	0.82				122.9101485	
		150	1148	7.7	189.5	0.83				124.1534978	
		150	1148	7.7	191.1	0.84				126.1818694	
		150	1336	8.9	175.8	0.83				124.3559859	
		150	1336	8.9	175.6	0.83				124.0313271	
		150	1480	9.9	175.1	0.91				136.5310839	
		150	1480	9.9	171.5	0.87				131.0602687	
65# yew ELB	http://ww	62	520	8.4	174.0	0.76				47.38921942	
oregon yew	http://ww	75	985	13.1	158.0	0.99				74.00139878	
128# yew ELB	http://ww	128	1230	9.6	170.0	0.84				106.9992342	
										0	
Mark Stretton w/ 140lb@32"	A report of	140	1080	7.7	163.0	0.62	496.3	0.90	68.5%	86.383584	
		140	1343	9.6	150.9	0.66	496.3	0.90	73.0%	92.046	
										0	
Joe Gibbs swiss yew	https://ww	180	972	5.4	209.0	0.71				127.8300772	
										0	
		200	1750	8.8						0	
										0	
Laminated English Longbow										0	
Aidrian Hayes 52#	http://ww	52	445	8.6	169.0	0.74	50.2	0.82	89.9%	38.25701976	
Aidrian Hayes 52#		52	500	9.6	158.0	0.72	50.2	0.80	90.9%	37.57179061	
Aidrian Hayes 52#		52	530	10.2	153.0	0.72	50.2	0.79	91.3%	37.34534246	
Aidrian Hayes 52#		52	565	10.9	148.0	0.72	50.2	0.78	91.8%	37.25199995	
										0	
bamboo backed	http://su.r	85	650	7.6	188.0	0.81		0.81	100.0%	69.15232244	
										0	
chris-boyton high perf	http://ww	45	445	9.9	165.0	0.81	12.1	0.83	97.3%	36.46746833	
chris-boyton high perf		45	500	11.1	154.0	0.79	12.1	0.81	97.6%	35.69350208	
chris-boyton high perf		45	530	11.8	150.0	0.80	12.1	0.82	97.8%	35.89517729	
chris-boyton high perf		45	565	12.6	146.0	0.81	12.1	0.82	97.9%	36.25199191	
										0	
bickerstaff 46#	http://ww	46	445	9.7	143.0	0.60	181.3	0.84	71.0%	27.39112066	
bickerstaff 46#		46	500	10.9	140.0	0.64	181.3	0.87	73.4%	29.49876205	
bickerstaff 46#		46	530	11.5	135.0	0.63	181.3	0.85	74.5%	29.07509361	
bickerstaff 46#		46	565	12.3	131.0	0.63	181.3	0.84	75.7%	29.18560861	
										0	
chris-boyton	http://ww	45	445	9.9	154.0	0.71	177.1	0.99	71.5%	31.76721685	
chris-boyton		45	500	11.1	148.0	0.73	177.1	0.99	73.8%	32.96637163	
chris-boyton		45	530	11.8	144.0	0.74	177.1	0.98	74.9%	33.08099539	
chris-boyton		45	565	12.6	141.0	0.75	177.1	0.99	76.1%	33.81149612	
										0	
Ron Palmer	http://ww	35	445	12.7	138.0	0.73	58.0	0.82	88.5%	25.50914479	
Ron Palmer		35	500	14.3	135.0	0.78	58.0	0.87	89.6%	27.42933359	
Ron Palmer		35	530	15.1	130.0	0.77	58.0	0.85	90.1%	26.9612665	
Ron Palmer		35	565	16.1	124.0	0.75	58.0	0.82	90.7%	26.14986994	
										0	
										0	
										0	
										0	
										0	



		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
AFB (FRP)	http://www.arc	40	445	11.1	166.0	0.92	58.7	1.04	88.3%
		40	500	12.5	162.0	0.99	58.7	1.10	89.5%
		40	530	13.3	151.0	0.91	58.7	1.01	90.0%
		40	565	14.1	145.0	0.89	58.7	0.99	90.6%
	https://www.yc	60	485	8.1	174.0	0.74		0.74	100.0%
	http://www.arc	47	445	9.5	182.0	0.94	12.7	0.97	97.2%
		47	500	10.6	170.0	0.93	12.7	0.95	97.5%
		47	530	11.3	164.0	0.91	12.7	0.94	97.6%
		47	565	12.0	162.0	0.95	12.7	0.97	97.8%
	http://www.arc	50	445	8.9	168.0	0.76	186.3	1.07	70.5%
		50	500	10.0	158.0	0.75	186.3	1.03	72.8%
		50	530	10.6	155.0	0.77	186.3	1.04	74.0%
		50	565	11.3	154.0	0.81	186.3	1.07	75.2%
	http://www.arc	46	445	9.7	164.0	0.78	13.4	0.81	97.1%
		46	500	10.9	158.0	0.82	13.4	0.84	97.4%
		46	530	11.5	151.0	0.79	13.4	0.81	97.5%
		46	565	12.3	146.0	0.79	13.4	0.81	97.7%
	http://www.arc	48	445	9.3	172.0	0.83	40.0	0.90	91.7%
		48	500	10.4	165.0	0.85	40.0	0.92	92.6%
		48	530	11.0	156.0	0.81	40.0	0.87	93.0%
		48	565	11.8	154.0	0.84	40.0	0.90	93.4%
	http://petewar	38	424	11.2	145.0	0.71	476.0	1.50	47.1%
		38	524	13.8	141.0	0.83	476.0	1.58	52.4%
		38	610	16.1	132.0	0.84	476.0	1.50	56.2%
		41	424	10.3	157.0	0.77	135.1	1.01	75.8%
		41	524	12.8	152.0	0.89	135.1	1.12	79.5%
		41	610	14.9	136.0	0.83	135.1	1.01	81.9%
		43	424	9.9	163.0	0.79	128.9	1.03	76.7%
		43	524	12.2	152.0	0.85	128.9	1.06	80.2%
		43	610	14.2	141.0	0.85	128.9	1.03	82.5%
	http://petewar	39	424	10.9	152.0	0.76	183.6	1.08	69.8%
		39	524	13.4	141.0	0.80	183.6	1.09	74.0%
		39	610	15.6	133.0	0.83	183.6	1.08	76.9%

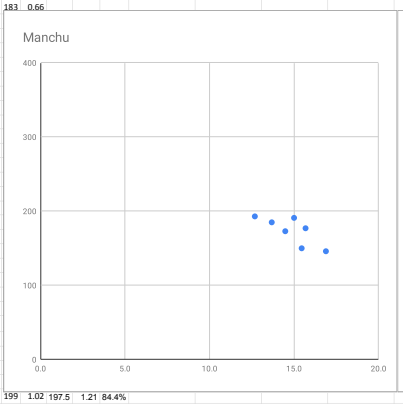
		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
		41	424	10.3	159.0	0.79	179.0	1.12	70.3%
		41	524	12.8	148.0	0.84	179.0	1.13	74.5%
		41	610	14.9	139.0	0.87	179.0	1.12	77.3%
		44	424	9.6	165.0	0.79	170.4	1.11	71.3%
		44	524	11.9	154.0	0.85	170.4	1.13	75.5%
		44	610	13.9	144.0	0.87	170.4	1.11	78.2%
	https://m.prod	60	540	9.0	189.0	0.97			

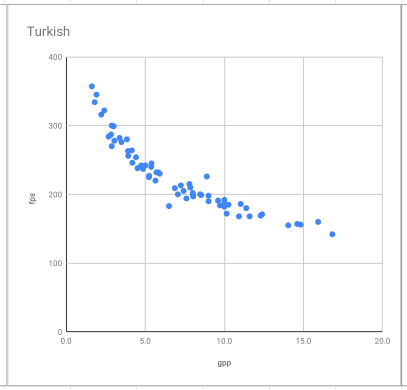
		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %					
Korean hornbow	http://www.scie	53	370.4	7.0	243	1.24								
Korean horn/carbon hybrid	http://tonygt19	58	551	9.5	210	1.26								
	http://www.scie	49	370.4	7.6	221	1.11								
synthetic	http://www.scie	55	370.4	6.7	226	1.04								
Korean synthetic														
hwarang @28"	http://img694.i	50	460	9.2	208	1.20	223.4	1.78	67.3%					
	https://www.you	50	477	9.5	205	1.21	223.4	1.77	68.1%					
		50	489	9.8	206	1.25	223.4	1.82	68.6%					
		50	502	10.0	201	1.22	223.4	1.76	69.2%					
		50	502	10.0	200	1.21	223.4	1.75	69.2%					
		50	511	10.2	197	1.19	223.4	1.72	69.6%					
		50	523	10.5	196	1.21	223.4	1.73	70.1%					
		50	532	10.6	198	1.26	223.4	1.78	70.4%					
		50	602	12.0	191	1.32	223.4	1.81	72.9%				46	ftlbs
		50	605	12.1	190	1.31	223.4	1.80	73.0%				62.36763825	J
		50	613	12.3	189	1.32	223.4	1.80	73.3%					
		50	630	12.6	187	1.33	223.4	1.80	73.8%					
		50	694	13.9	180	1.35	223.4	1.79	75.6%					
		50	741	14.8	173	1.34	223.4	1.74	76.8%					
		50	752	15.0	173	1.35	223.4	1.76	77.1%					
		50	776	15.5	172	1.38	223.4	1.78	77.6%					
Hwarang Korean	http://www.kor	55	500	9.1	211	1.22	26.52	1.28	95.0%					
		55	405	7.4	236	1.23	26.52	1.32	93.8%					
		55	405	7.4	220	1.07	26.52	1.14	93.8%					
YMG 65@28	http://www.korea	61	353	5.8	236	0.97	*148*	*1.37*	*70.4%*					
YMG 65@31		70	353	5.1	265	1.07	*161*	*1.56*	*68.7%*					
Korean YMG	http://www.kor	57	416	7.3	216	1.02								
Korean HMG	http://www.kor	47	416	8.9	186	0.92								
Kaya KTB	http://www.kor	45	330	7.3	205	0.93								
		50	396	7.9	202	0.97								
Kaya KTB	http://tradtalk.c	39		0.0	170	0.00								
	http://leatherw	50	400	8.0	195	0.92								
Kaya KTB	https://www.face	56	502.4	9.0	207.	1.16								
		56	503.4	9.0	201.	1.10								
		56	501.7	9.0	202.	1.11								
		56	501.5	9.0	202.	1.10								
		56	500.1	8.9	205.	1.14								
ginni graphs	http://www.korea													
SMG 52" @28"		68						*1.45*						
SMG 52" @29.5"		75						*1.49*						
SMG 52" @33"		98						*1.48*						
SMG 50" @28"		63						*1.43*						
SMG 50" @29.5"		70						*1.45*						
SMG 50" @33"		98						*1.37*						
YMG 50" @28"		61						*1.39*						
YMG 50" @29"		65						*1.41*						
YMG 50" @33"		90						*1.40*						
SMG 52" @28"		47						*1.48*						
SMG 52" @29"		50						*1.50*						
SMG 52" @33"		73						*1.40*						
SMG 50" @28"		47						*1.36*						
SMG 50" @29"		50						*1.37*						
SMG 50" @33"		73						*1.32*						
SMG 50" @28"		20						*1.48*						
SMG 50" @29"		22						*1.49*						
SMG 50" @29.5"		32						*1.39*						

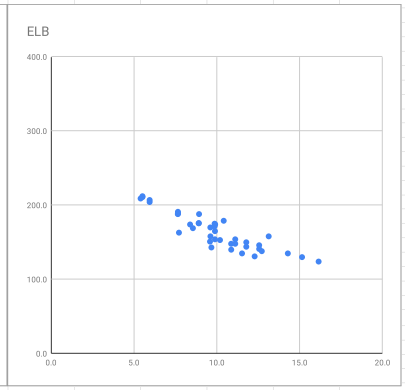
		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %					
SMG 50" @33"		43						*1.24*						
Tong-ah														
http://www.koreanarchery.org/punbb/viewtopi		50	200	4.0	283	0.96								

		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
82# Manchu Horn	http:/	82	1230	15.0	191	1.65	67	1.7367774	*94.84%*
50#@32" Manchu Synthetic	http:/	50	634	12.7	193	1.42			
50#@32" Manchu		50	684	13.7	185	1.41	20.7	1.4521508	97.1%
50#@32" Manchu		50	784	15.7	177	1.48	20.7	1.5179047	97.4%
50#@32" Manchu		50	724	14.5	173	1.30	20.7	1.3419537	97.2%
40# Tiger Tail II	https:	40	618	15.5	150	1.05			
52# laminated Manchu		52	878	16.9	146	1.08			

		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
Turkish Synthetic	http:	64	416	6.5	183	0.66			
	Tirer	57	456	8.0					
		57	513	9.0					
		57	570	10.0					
	Tirer	50	400	8.0					
		50	450	9.0					
		50	500	10.0					
	https	45	400	8.9					
Francesco Turkish	http:	70	293	4.2					
Francesco Turkish		70	340	4.9					
Francesco Turkish		70	367	5.2					
Francesco Turkish		70	494	7.1					
Francesco Turkish		70	710	10.1					
Francesco Turkish	http:	65	255	3.9					
Francesco Turkish		65	293	4.5					
Francesco Turkish		65	340	5.2					
Francesco Turkish		65	367	5.6					
Francesco Turkish		65	494	7.6					
Francesco Turkish		65	710	10.9					
Łukasz Nawalny		75	216	2.9					
karpowicz test	http:	64	475	7.4					
		64	640	10.0					
Karpowicz 125# flight	http:	125	1548	12.4					
	http:	125	1067	8.5	199	1.02	197.5	1.21	84.4%
		125	739	5.9	230	0.94	197.5	1.19	78.9%
		125	552	4.4	254	0.86	197.5	1.16	73.6%
		125	360	2.9	300	0.78	197.5	1.21	64.6%
		125	203	1.6	357	0.62	197.5	1.23	50.7%
Karpowicz 106# flight		106	1548	14.6	157	1.08	148.3	1.19	91.2%
		106	1067	10.1	185	1.04	148.3	1.18	87.8%
		106	605	5.7	232	0.92	148.3	1.15	80.3%
		106	440	4.2	264	0.87	148.3	1.16	74.8%
		106	358	3.4	282	0.81	148.3	1.14	70.7%
		106	255	2.4	322	0.75	148.3	1.19	63.2%
		106	203	1.9	345	0.69	148.3	1.19	57.8%
Karpowicz 92# flight		92	1548	16.8	142	1.02	136.1	1.11	91.9%
		92	1067	11.6	168	0.99	136.1	1.11	88.7%
		92	739	8.0	197	0.94	136.1	1.11	84.4%
		92	437	4.8	242	0.84	136.1	1.10	76.2%
		92	360	3.9	263	0.81	136.1	1.12	72.6%
		92	204	2.2	316	0.67	136.1	1.11	60.0%
Karpowicz 126# hybrid		126	1548	12.3	169	1.06	227.6	1.21	87.2%
		126	1067	8.5	200	1.02	227.6	1.24	82.4%
		126	733	5.8	232	0.94	227.6	1.24	76.3%
		126	440	3.5	276	0.80	227.6	1.22	65.9%
		126	227	1.8	334	0.60	227.6	1.21	49.9%
Karpowicz 136# hybrid		136	1548	11.4	180	1.11	200.7	1.25	88.5%
		136	1067	7.8	210	1.04	200.7	1.24	84.2%
		136	733	5.4	245	0.97	200.7	1.24	78.5%
		136	522	3.8	280	0.91	200.7	1.25	72.2%
Karpowicz 72# war		72	1548	21.5	131	1.11	149.7	1.22	91.2%
		72	1067	14.8	156	1.09	149.7	1.24	87.7%
		72	739	10.3	185	1.06	149.7	1.27	83.1%
		72	522	7.3	213	0.99	149.7	1.27	77.7%
		72	360	5.0	242	0.88	149.7	1.25	70.6%
		72	204	2.8	287	0.70	149.7	1.22	57.7%
Karpowicz 76# war		76	1548	20.4	130	1.04	152.3	1.14	91.0%
		76	1067	14.0	155	1.02	152.3	1.16	87.5%
		76	739	9.7	184	0.99	152.3	1.20	82.9%
		76	522	6.9	209	0.90	152.3	1.17	77.4%
		76	360	4.7	241	0.83	152.3	1.18	70.3%
		76	204	2.7	284	0.65	152.3	1.14	57.3%
Karpowicz 67# target		67	1548	23.1	135	1.27	210.7	1.44	88.0%
		67	1067	15.9	160	1.23	210.7	1.47	83.5%
		67	739	11.0	186	1.15	210.7	1.48	77.8%
		67	522	7.8	215	1.08	210.7	1.52	71.2%
		67	360	5.4	240	0.93	210.7	1.48	63.1%
		67	204	3.0	278	0.71	210.7	1.44	49.2%
Grozer Horn Turkish	https	50	480	9.6	191	1.05			
turkish	http:	65	193	3.0	299	#REF!			







		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
Yumi nibe C	http:	54		0.0	158	0.00			
Yumi nibe D		91		0.0	163	0.00			
Yumi nibe E		33		0.0	142	0.00			
Yumi nibe F		61		0.0	151	0.00			
Japanese Yumi	http:	44	460	10.5	180	1.02			
C 4-sun	http:	35	436.7	12.5	179	1.20	238	1.86	64.8%
C 4-sun		35	433.7	12.4	187	1.30	238	2.02	64.6%
C 4-sun		35	379.6	10.8	192	1.20	238	1.96	61.5%
C 4-sun		35	481.5	13.8	181	1.36	238	2.03	67.0%
C 4-sun		35	513.9	14.7	174	1.34	238	1.96	68.4%
C 4-sun		40	436.7	10.9	186	1.14	256	1.80	63.0%
C 4-sun		40	433.7	10.8	189	1.17	256	1.85	62.9%
C 4-sun		40	379.6	9.5	197	1.11	256	1.86	59.7%
C 4-sun		40	481.5	12.0	182	1.20	256	1.84	65.3%
C 4-sun		40	513.9	12.8	179	1.24	256	1.86	66.7%
BC 4-sun		40	436.7	10.9	177	1.03			
BC 4-sun		40	379.6	9.5	187	1.00			
G 4-sun		34	436.7	12.8	176	1.20			
B 4-sun		42	436.7	10.4	184	1.06	643	2.62	40.4%
B 4-sun		42	944.5	22.5	154	1.61	643	2.70	59.5%
B 4-sun		42	433.7	10.3	187	1.09	643	2.70	40.3%
B 4-sun		42	481.5	11.5	180	1.12	643	2.61	42.8%
B 4-sun		42	513.9	12.2	166	1.01	643	2.28	44.4%
B nobi		49	436.7	8.9	187	0.94			
B 4-sun		39	433.7	11.1	176	1.04	172	1.45	71.6%
B 4-sun		39	379.6	9.7	184	0.99	172	1.44	68.8%
B 4-sun		39	481.5	12.3	165	1.01	172	1.37	73.7%
B 4-sun		39	513.9	13.2	166	1.09	172	1.46	74.9%
BC 4-sun		39	436.7	11.2	182	1.12	13	1.15	97.1%
BC 4-sun		39	433.7	11.1	183	1.12	13	1.15	97.1%
BC 4-sun		39	379.6	9.7	190	1.06	13	1.09	96.7%
BC 4-sun		39	481.5	12.3	175	1.14	13	1.17	97.4%
BC 4-sun		39	513.9	13.2	164	1.07	13	1.09	97.5%

		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
BC 4-sun		39	433.7	11.1	176	1.04	13	1.07	97.1%
BC 4-sun		39	379.6	9.7	177	0.92	13	0.95	96.7%
BC 4-sun		39	481.5	12.3	171	1.09	13	1.12	97.4%
BC 4-sun		39	513.9	13.2	164	1.07	13	1.09	97.5%
B 4-sun		36	436.7	12.1	173	1.09	113	1.38	79.4%
B 4-sun		36	433.7	12.0	172	1.07	113	1.35	79.3%
B 4-sun		36	379.6	10.5	185	1.09	113	1.41	77.0%
B 4-sun		36	481.5	13.4	172	1.19	113	1.47	80.9%
B 4-sun		36	513.9	14.3	164	1.16	113	1.41	81.9%
B 4-sun		35	436.7	12.5	178	1.19	113	1.50	79.4%
B 4-sun		35	433.7	12.4	179	1.20	113	1.51	79.3%
B 4-sun		35	379.6	10.8	185	1.12	113	1.45	77.0%
B 4-sun		35	481.5	13.8	166	1.14	113	1.41	80.9%
B 4-sun		35	513.9	14.7	167	1.23	113	1.50	81.9%
G 4-sun		33	402.8	12.2	177	1.15			
C 4-sun		40	436.7	10.9	175	1.01			
C 4-sun		40	402.8	10.1	187	1.06			
G 4-sun		32	354.9	11.1	179	1.07			
G 4-sun		32	771.6	24.1	141	1.44			
BC nobi		37	447.5	12.1	150	0.82			
BC nobi		37	478.4	12.9	151	0.89			
C nobi		39	447.5	11.5	162	0.91			
G nobi		26	447.5	17.2	108	0.60			
G nobi		26	447.5	17.2	107	0.59			
G nobi		22	447.5	20.3	105	0.68			
G nobi		22	293.2	13.3	153	0.94			
G nobi		25	447.5	17.9	139	1.04			
G nobi		29	447.5	15.4	144	0.96			
G nobi		27	447.5	16.6	140	0.98			
B nobi		32	447.5	14.0	152	0.97			
B nobi		42	447.5	10.7	166	0.88			
G 4-sun		35	402.8	11.5	192	1.28			
G 4-sun		35	632.7	18.1	171	1.59			
C 4-sun		42	436.7	10.4	190	1.13			
C 4-sun		42	436.7	10.4	184	1.06			
B 4-sun		44	436.7	9.9	190	1.08			
C 4-sun		37	402.8	10.9	191	1.20			
C 4-sun		37	436.7	11.8	187	1.24			

		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
BC 4-sun		40	436.7	10.9	195	1.25			
G nobi		29	387.4	13.4	160	1.03	144	1.41	72.8%
G nobi		29	387.4	13.4	164	1.08	144	1.48	72.8%
G nobi		29	472.2	16.3	152	1.13	144	1.48	76.6%
G nobi		29	472.2	16.3	151	1.12	144	1.46	76.6%
G nobi		29	640.4	22.1	136	1.23	144	1.51	81.6%
G nobi		29	640.4	22.1	135	1.21	144	1.48	81.6%
C nobi		37	418.2	11.3	178	1.08			
C nobi		37	354.9	9.6	176	0.89			
B nami		25	390.4	15.6	146	1.00			
B nami		25	771.6	30.9	89	0.74			
G nobi		29	463	16.0	112	0.60			
C nami		26	353.4	13.6	144	0.85			
G nobi		32	470.7	14.7	136	0.82			
B 4-sun		42	436.7	10.4	187	1.09			
B 4-sun		42	482	11.5	187	1.21			
C 4-sun		46	436.7	9.5	185	0.98			
C 4-sun		46	478.4	10.4	180	1.01			
C 4-sun		40	436.7	10.9	190	1.19			
C 4-sun		40	478.4	12.0	181	1.18			
G nobi		33	493.8	15.0	154	1.07	78	1.24	86.4%
G nobi		33	427.5	13.0	164	1.05	78	1.24	84.6%
G nobi		33	354.9	10.8	177	1.01	78	1.24	82.0%
G nobi		33	416.7	12.6	154	0.90	78	1.07	84.3%
B nobi		51	694.5	13.6	158	1.02			
G nobi		36	354.9	9.9	177	0.93	331	1.80	51.8%
G nobi		36	427.5	11.9	167	1.00	331	1.77	56.4%
G nobi		36	478.4	13.3	167	1.12	331	1.89	59.1%
G nobi		36	540.1	15.0	158	1.13	331	1.82	62.0%
G nobi		36	780.9	21.7	139	1.26	331	1.80	70.3%
B		36	478.4	13.3	161	1.04			
B		27	402	14.9	152	1.04			

		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
Grozer Biocom Turk	Tirendaz	57	456	8.0	200	0.96	22.57	1.01	95.3%
		57	513	9.0	190	0.98	22.57	1.02	95.8%
		57	570	10.0	187	1.05	22.57	1.09	96.2%
Grozer TRH Turk	Tirendaz	50	400	8.0	202	0.98	27.17	1.05	93.6%
		50	450	9.0	198	1.06	27.17	1.13	94.3%
		50	500	10.0	192	1.11	27.17	1.17	94.8%
Grozer L2 Crim tatar	Tirendaz	50	400	8.0	202	0.98	22.47	1.04	94.7%
		50	450	9.0	195	1.03	22.47	1.08	95.2%
		50.0	500.0	10.0	190.00	1.09	22.47	1.14	95.7%
Grozer L6 Sarmatian	https://ww	43	400	5.0	217	1.32			
Grozer L7 Turkish		45	400	5.0	226	1.37			
Grozer Bio Assyrian		56	400	4.2	237	1.21			
Grozer Bio Assyrian		61	400	4.0	243	1.17			
grozer biocomposite assyrian	http://leathe	42	399	9.5	177	0.90			

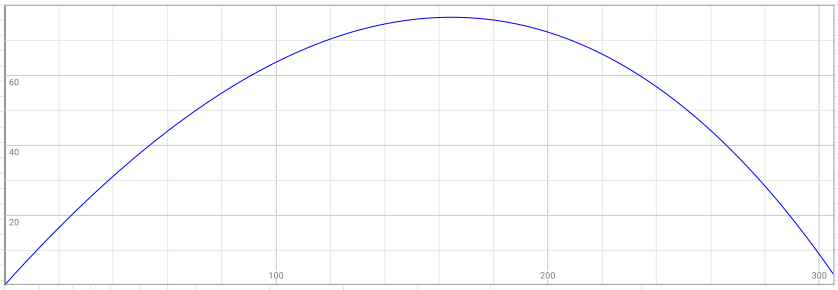
		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
PVC Holmegaard	https	50	250	5.0	185	0.52			
		50	300	6.0	175	0.55			
	http:	80	435	5.4	160	0.42			
	http:	35	503	14.4	108	0.50			
		35	503	14.4	112	0.54			
black long recurv	https	45	450	10.0	145	0.63	214.4	0.93	67.7%
		45	550	12.2	138	0.70	214.4	0.97	71.9%
		45	630	14.0	128	0.69	214.4	0.93	74.6%
		45	360	8.0	149	0.53	214.4	0.85	62.7%
		45	270	6.0	169	0.52	214.4	0.93	55.7%
blue short recurv	https	45	450	10.0	164	0.81	108.1	1.00	80.6%
		45	550	12.2	158	0.92	108.1	1.10	83.6%
		45	630	14.0	141	0.84	108.1	0.98	85.3%
		45	360	8.0	183	0.81	108.1	1.05	76.9%
		45	270	6.0	197	0.70	108.1	0.98	71.4%
backyard bowyer	http:	45	270	6.0	169	0.52	232.6	0.96	53.7%
		45	360	8.0	150	0.54	232.6	0.89	60.7%
		45	450	10.0	145	0.63	232.6	0.96	65.9%
		45	540	12.0	138	0.69	232.6	0.98	69.9%
		45	630	14.0	129	0.70	232.6	0.96	73.0%
holmegaard	https	48	435	9.1		0.00			
snakeskin	https	55	550	10.0	136	0.56			
	https://plus.go			#DIV/0!	197	#DIV/0!			

		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
Toth Mongol	https://wv	40	550	13.8	145	0.87			
Kassai Hungarian		110	1100	10.0	206	1.28			
hungarian	http://ata	57	617	10.8	172	0.96			
Saluki Crim Tatar	http://ww	70	416	5.9	222	0.88			
		70.2	416	5.9	238	1.01			
Saluki Damascus	http://ww	41.6	416	10.0	181	0.99			
Karpowicz CrimTatar	http://ata	144	1115	7.7	208	1.01			
Karpowicz KrimTatar	http://ata	159	969	6.1	248	1.13			
		165	969	5.9	243	1.04			
Karpowicz KrimTatar	http://ata	180	984.00	5.5	249	1.02	67.4	1.09	93.6%
		180	1777	9.9	188	1.05	67.4	1.09	96.3%
Crim Tatar monster finger loose	https://wv	180	976.8	5.4	211	0.73	574.7	1.16	62.9%
		180	463	2.6	258	0.52	574.7	1.16	44.6%
Mariner Han	http://ww	54	416	7.7	173	0.70			
Mariner Han	http://www	54	500	9.3	175	0.86			
Kaiyuan	http://www	40	341	8.5	192	0.95			
Samick Sage	http://cav	44	378	8.6	165	0.70	73.02	0.84	83.8%
		44	423	9.6	153	0.68	73.02	0.79	85.3%
		44	511	11.6	145	0.73	73.02	0.84	87.5%
Bearpaw Horsebow	http://pet	37	346	9.3	178	0.89			
		41	346	8.4	189	0.91			
		45	346	7.7	193	0.86			
bearpaw scythian	http://ww	40	445	11.1	160	0.86	266.2	1.37	62.6%
		40	500	12.5	154	0.89	266.2	1.37	65.3%
		40	530	13.3	150	0.90	266.2	1.35	66.6%
		40	565	14.1	148	0.93	266.2	1.37	68.0%

http://www.arcoefreccia.it/public/Forum/Data/brzvtr/2012618151810_CX.pdf

Arrow data			Bow data			Flight data		
Drag=K*V^2		lbf	PDF	60	lbs	V0=	215.1	fps
K=	7E-07		PE	1.40	J/lb	initKE	56.1	J
Mass=	403.0	gr	Vmass	200	gr	ImpactKE	29.2	J
	26.11	g	PE	*84*	J	Max range	305.6	m
	6.7	gpp	Dyn eff	66.8%	%	Flight time	7.8	s
						Impact angle	-48.1	deg

Point coeff B	1.00	(1 for bullet, 2.3 for parallel pile, 7.0 for blunt)
Max diameter D	0.30	in
Shaft length L	32.00	in
Fletch type FT	0.85	(1 for turkey, 0.85 for pheasant/goose, 0.7 for vane)
Fletch length FL	100	mm
Fletch height FH	8.0	mm
Fletch area F	0.62	sqin
Number of fletch I	3	[-]



	Position		Velocity			Pitch		Decel	
t	x	y	Vx	Vy	V	deg		ax	ay
0	0.00	0.00	49.5	43.0	65.6	41.00	5.49		
0.1	4.91	4.19	49.1	41.7	64.4	40.34	5.29	4.14	13.41
0.2	9.79	8.25	48.7	40.4	63.2	39.66	5.10	4.03	13.23
0.3	14.62	12.17	48.3	39.0	62.1	38.97	4.92	3.93	13.07
0.4	19.42	15.97	47.9	37.8	61.0	38.25	4.75	3.83	12.90
0.5	24.18	19.64	47.5	36.5	59.9	37.51	4.58	3.73	12.75
0.6	28.90	23.18	47.2	35.2	58.9	36.76	4.42	3.63	12.60
0.7	33.58	26.60	46.8	34.0	57.8	35.98	4.27	3.54	12.46
0.8	38.24	29.90	46.5	32.7	56.8	35.18	4.12	3.45	12.32
0.9	42.85	33.07	46.1	31.5	55.9	34.35	3.98	3.37	12.19
1	47.44	36.12	45.8	30.3	54.9	33.51	3.85	3.29	12.06
1.1	51.99	39.05	45.5	29.1	54.0	32.64	3.72	3.21	11.94
1.2	56.51	41.87	45.2	27.9	53.1	31.75	3.60	3.13	11.82
1.3	61.00	44.57	44.9	26.8	52.2	30.84	3.48	3.06	11.70
1.4	65.46	47.15	44.6	25.6	51.4	29.90	3.37	2.99	11.59
1.5	69.89	49.61	44.3	24.5	50.6	28.93	3.26	2.92	11.49
1.6	74.30	51.96	44.0	23.3	49.8	27.94	3.16	2.86	11.39
1.7	78.67	54.20	43.7	22.2	49.0	26.93	3.07	2.79	11.29
1.8	83.02	56.33	43.4	21.1	48.3	25.89	2.97	2.73	11.20
1.9	87.34	58.34	43.2	20.0	47.5	24.83	2.89	2.67	11.11
2	91.63	60.25	42.9	18.9	46.9	23.74	2.80	2.62	11.02
2.1	95.90	62.04	42.6	17.8	46.2	22.63	2.72	2.57	10.94
2.2	100.14	63.73	42.4	16.7	45.6	21.49	2.65	2.51	10.86
2.3	104.36	65.31	42.1	15.6	44.9	20.32	2.58	2.46	10.78
2.4	108.55	66.78	41.9	14.5	44.3	19.13	2.51	2.42	10.71
2.5	112.72	68.15	41.7	13.5	43.8	17.92	2.45	2.37	10.63
2.6	116.87	69.41	41.4	12.4	43.2	16.69	2.39	2.33	10.56
2.7	120.99	70.56	41.2	11.4	42.7	15.43	2.33	2.29	10.50
2.8	125.09	71.61	41.0	10.3	42.3	14.14	2.28	2.25	10.43
2.9	129.17	72.56	40.8	9.3	41.8	12.84	2.23	2.21	10.37
3	133.23	73.40	40.5	8.3	41.4	11.51	2.18	2.17	10.31
3.1	137.26	74.14	40.3	7.2	41.0	10.17	2.14	2.14	10.25
3.2	141.28	74.78	40.1	6.2	40.6	8.81	2.10	2.11	10.19
3.3	145.27	75.31	39.9	5.2	40.2	7.43	2.07	2.08	10.13
3.4	149.25	75.75	39.7	4.2	39.9	6.03	2.03	2.05	10.08
3.5	153.20	76.09	39.5	3.2	39.6	4.62	2.00	2.02	10.02
3.6	157.13	76.32	39.3	2.2	39.4	3.19	1.98	2.00	9.97
3.7	161.04	76.46	39.1	1.2	39.1	1.76	1.95	1.97	9.92
3.8	164.94	76.50	38.9	0.2	38.9	0.32	1.93	1.95	9.87
3.9	168.81	76.44	38.7	-0.8	38.7	-1.14	1.91	1.93	9.82
4	172.67	76.28	38.5	-1.7	38.6	-2.59	1.90	1.91	9.77
4.1	176.50	76.02	38.3	-2.7	38.4	-4.06	1.88	1.90	9.72
4.2	180.32	75.67	38.1	-3.7	38.3	-5.52	1.87	1.88	9.68
4.3	184.12	75.22	38.0	-4.6	38.2	-6.98	1.87	1.87	9.63
4.4	187.90	74.68	37.8	-5.6	38.2	-8.44	1.86	1.85	9.58
4.5	191.66	74.04	37.6	-6.6	38.2	-9.90	1.86	1.84	9.54
4.6	195.40	73.30	37.4	-7.5	38.1	-11.35	1.86	1.83	9.49
4.7	199.13	72.47	37.2	-8.5	38.2	-12.80	1.86	1.82	9.44
4.8	202.84	71.55	37.0	-9.4	38.2	-14.23	1.86	1.81	9.40
4.9	206.52	70.53	36.9	-10.3	38.3	-15.65	1.87	1.81	9.35
5	210.20	69.42	36.7	-11.3	38.4	-17.06	1.88	1.80	9.31
5.1	213.85	68.22	36.5	-12.2	38.5	-18.46	1.89	1.80	9.26
5.2	217.48	66.92	36.3	-13.1	38.6	-19.84	1.90	1.79	9.21
5.3	221.10	65.54	36.1	-14.0	38.8	-21.21	1.92	1.79	9.16
5.4	224.70	64.06	36.0	-14.9	38.9	-22.55	1.94	1.79	9.12
5.5	228.28	62.49	35.8	-15.8	39.1	-23.88	1.95	1.79	9.07
5.6	231.84	60.83	35.6	-16.7	39.3	-25.19	1.98	1.79	9.02
5.7	235.39	59.08	35.4	-17.6	39.6	-26.47	2.00	1.79	8.97
5.8	238.92	57.24	35.2	-18.5	39.8	-27.73	2.02	1.79	8.92
5.9	242.43	55.31	35.1	-19.4	40.1	-28.98	2.05	1.79	8.87
6	245.92	53.30	34.9	-20.3	40.4	-30.19	2.08	1.79	8.82
6.1	249.39	51.20	34.7	-21.2	40.7	-31.39	2.11	1.80	8.76
6.2	252.85	49.01	34.5	-22.0	41.0	-32.56	2.14	1.80	8.71
6.3	256.29	46.73	34.3	-22.9	41.3	-33.71	2.18	1.81	8.66
6.4	259.71	44.37	34.2	-23.8	41.6	-34.83	2.21	1.81	8.60
6.5	263.11	41.92	34.0	-24.6	42.0	-35.93	2.25	1.82	8.55
6.6	266.49	39.38	33.8	-25.5	42.3	-37.01	2.29	1.82	8.49
6.7	269.86	36.77	33.6	-26.3	42.7	-38.06	2.33	1.83	8.43
6.8	273.20	34.06	33.4	-27.2	43.1	-39.08	2.37	1.83	8.38
6.9	276.53	31.28	33.3	-28.0	43.5	-40.09	2.41	1.84	8.32
7	279.84	28.41	33.1	-28.8	43.9	-41.07	2.46	1.84	8.26
7.1	283.13	25.46	32.9	-29.6	44.3	-42.03	2.50	1.85	8.20
7.2	286.40	22.43	32.7	-30.4	44.7	-42.96	2.55	1.86	8.14
7.3	289.66	19.32	32.5	-31.3	45.1	-43.87	2.60	1.86	8.07
7.4	292.89	16.13	32.3	-32.1	45.5	-44.76	2.65	1.87	8.01
7.5	296.11	12.85	32.1	-32.9	46.0	-45.63	2.70	1.88	7.95
7.6	299.31	9.50	31.9	-33.6	46.4	-46.48	2.75	1.88	7.88
7.7	302.49	6.07	31.8	-34.4	46.8	-47.30	2.80	1.89	7.82
7.8	305.65	2.57	31.6	-35.2	47.3	-48.11	2.85	1.90	7.75
7.9			31.4	-36.0	47.7	-48.90	2.91	1.90	7.69
8			31.2	-36.7	48.2	-49.66	2.96	1.91	7.62
8.1			31.0	-37.5	48.6	-50.41	3.02	1.92	7.55
8.2			30.8	-38.2	49.1	-51.14	3.08	1.92	7.48
8.3			30.6	-39.0	49.6	-51.85	3.13	1.93	7.41
8.4			30.4	-39.7	50.0	-52.55	3.19	1.94	7.34
8.5			30.2	-40.4	50.5	-53.22	3.25	1.94	7.28
8.6			30.0	-41.2	50.9	-53.89	3.31	1.95	7.20
8.7			29.8	-41.9	51.4	-54.53	3.37	1.95	7.13
8.8			29.6	-42.6	51.9	-55.16	3.43	1.96	7.06
8.9			29.4	-43.3	52.3	-55.77	3.50	1.96	6.99
9			29.2	-44.0	52.8	-56.37	3.56	1.97	6.92
9.1			29.0	-44.7	53.3	-56.95	3.62	1.97	6.85
9.2			28.8	-45.3	53.7	-57.53	3.68	1.97	6.77
9.3			28.7	-46.0	54.2	-58.08	3.75	1.98	6.70
9.4			28.5	-46.7	54.7	-58.63	3.81	1.98	6.63
9.5			28.3	-47.3	55.1	-59.16	3.88	1.98	6.56
9.6			28.1	-48.0	55.6	-59.68	3.94	1.99	6.48
9.7			27.9	-48.6	56.0	-60.18	4.01	1.99	6.41
9.8			27.7	-49.2	56.5	-60.68	4.07	1.99	6.33
9.9			27.5	-49.9	56.9	-61.16	4.14	1.99	6.26

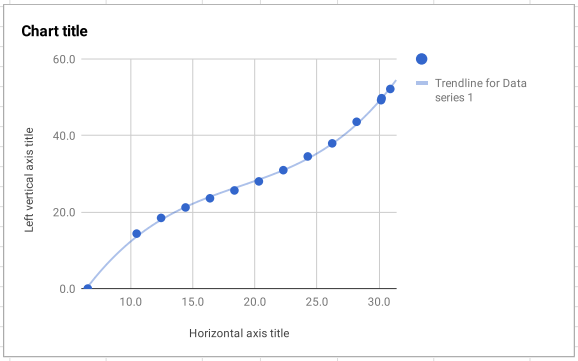
bow	arrow	lbs	gr	gpp	fps	range
Korean	죽시	60	563	9.4	217.0	334.7
Korean	편전	60	332	5.5	259.7	405.6
Korean	개량시	60	403	6.7		

10		27.3	-50.5	57.4	-61.63	4.20	1.99	6.19
10.1		27.1	-51.1	57.8	-62.10	4.27	2.00	6.11
10.2		26.9	-51.7	58.3	-62.55	4.33	2.00	6.04
10.3		26.7	-52.3	58.7	-62.99	4.40	2.00	5.97
10.4		26.5	-52.9	59.1	-63.42	4.46	2.00	5.89
10.5		26.3	-53.5	59.6	-63.84	4.53	2.00	5.82
10.6		26.1	-54.0	60.0	-64.26	4.59	2.00	5.75
10.7		25.9	-54.6	60.4	-64.66	4.66	2.00	5.67
10.8		25.7	-55.2	60.8	-65.05	4.72	1.99	5.60
10.9		25.5	-55.7	61.3	-65.44	4.79	1.99	5.53
11		25.3	-56.3	61.7	-65.82	4.86	1.99	5.45
11.1		25.1	-56.8	62.1	-66.19	4.92	1.99	5.38
11.2		24.9	-57.3	62.5	-66.55	4.98	1.99	5.31
11.3		24.7	-57.9	62.9	-66.91	5.05	1.98	5.24
11.4		24.5	-58.4	63.3	-67.26	5.11	1.98	5.17
11.5		24.3	-58.9	63.7	-67.60	5.18	1.98	5.09
11.6		24.1	-59.4	64.1	-67.93	5.24	1.97	5.02
11.7		23.9	-59.9	64.5	-68.26	5.30	1.97	4.95
11.8		23.7	-60.4	64.8	-68.58	5.37	1.96	4.88
11.9		23.5	-60.9	65.2	-68.90	5.43	1.96	4.81
12		23.3	-61.3	65.6	-69.21	5.49	1.96	4.74
12.1		23.1	-61.8	66.0	-69.51	5.55	1.95	4.68
12.2		22.9	-62.3	66.3	-69.80	5.62	1.94	4.61
12.3		22.7	-62.7	66.7	-70.10	5.68	1.94	4.54
12.4		22.5	-63.2	67.0	-70.38	5.74	1.93	4.47
12.5		22.3	-63.6	67.4	-70.66	5.80	1.93	4.41
12.6		22.1	-64.0	67.7	-70.94	5.86	1.92	4.34
12.7		21.9	-64.5	68.1	-71.20	5.92	1.91	4.27
12.8		21.7	-64.9	68.4	-71.47	5.98	1.91	4.21
12.9		21.6	-65.3	68.8	-71.73	6.03	1.90	4.14
13		21.4	-65.7	69.1	-71.98	6.09	1.89	4.08
13.1		21.2	-66.1	69.4	-72.23	6.15	1.88	4.02
13.2		21.0	-66.5	69.7	-72.48	6.21	1.88	3.95
13.3		20.8	-66.9	70.0	-72.72	6.26	1.87	3.89
13.4		20.6	-67.3	70.4	-72.96	6.32	1.86	3.83
13.5		20.4	-67.6	70.7	-73.19	6.37	1.85	3.77
13.6		20.2	-68.0	71.0	-73.42	6.43	1.84	3.71
13.7		20.1	-68.4	71.3	-73.65	6.48	1.83	3.65
13.8		19.9	-68.7	71.6	-73.87	6.54	1.83	3.59
13.9		19.7	-69.1	71.8	-74.09	6.59	1.82	3.53
14		19.5	-69.4	72.1	-74.30	6.64	1.81	3.47
14.1		19.3	-69.8	72.4	-74.51	6.69	1.80	3.42
14.2		19.2	-70.1	72.7	-74.72	6.74	1.79	3.36
14.3		19.0	-70.5	73.0	-74.92	6.79	1.78	3.30
14.4		18.8	-70.8	73.2	-75.12	6.84	1.77	3.25
14.5		18.6	-71.1	73.5	-75.31	6.89	1.76	3.19
14.6		18.5	-71.4	73.8	-75.51	6.94	1.75	3.14
14.7		18.3	-71.7	74.0	-75.70	6.99	1.74	3.09
14.8		18.1	-72.0	74.3	-75.88	7.04	1.73	3.04
14.9		17.9	-72.3	74.5	-76.07	7.09	1.72	2.98
15		17.8	-72.6	74.8	-76.25	7.13	1.71	2.93
15.1		17.6	-72.9	75.0	-76.43	7.18	1.70	2.88
15.2		17.4	-73.2	75.2	-76.60	7.22	1.68	2.83
15.3		17.3	-73.5	75.5	-76.78	7.27	1.67	2.78
15.4		17.1	-73.7	75.7	-76.95	7.31	1.66	2.73
15.5		16.9	-74.0	75.9	-77.11	7.36	1.65	2.69
15.6		16.8	-74.3	76.1	-77.28	7.40	1.64	2.64
15.7		16.6	-74.5	76.4	-77.44	7.44	1.63	2.59
15.8		16.4	-74.8	76.6	-77.60	7.48	1.62	2.55
15.9		16.3	-75.0	76.8	-77.76	7.52	1.61	2.50
16		16.1	-75.3	77.0	-77.91	7.56	1.60	2.46
16.1		16.0	-75.5	77.2	-78.06	7.60	1.58	2.41
16.2		15.8	-75.8	77.4	-78.21	7.64	1.57	2.37
16.3		15.7	-76.0	77.6	-78.36	7.68	1.56	2.33
16.4		15.5	-76.2	77.8	-78.51	7.72	1.55	2.29
16.5		15.3	-76.4	78.0	-78.65	7.76	1.54	2.24
16.6		15.2	-76.7	78.2	-78.79	7.80	1.53	2.20
16.7		15.0	-76.9	78.3	-78.93	7.83	1.52	2.16
16.8		14.9	-77.1	78.5	-79.07	7.87	1.50	2.12
16.9		14.7	-77.3	78.7	-79.21	7.90	1.49	2.08
17		14.6	-77.5	78.9	-79.34	7.94	1.48	2.05
17.1		14.4	-77.7	79.0	-79.47	7.97	1.47	2.01
17.2		14.3	-77.9	79.2	-79.60	8.01	1.46	1.97
17.3		14.2	-78.1	79.4	-79.73	8.04	1.45	1.93
17.4		14.0	-78.3	79.5	-79.85	8.07	1.43	1.90
17.5		13.9	-78.5	79.7	-79.98	8.10	1.42	1.86
17.6		13.7	-78.7	79.8	-80.10	8.14	1.41	1.83
17.7		13.6	-78.8	80.0	-80.22	8.17	1.40	1.79
17.8		13.4	-79.0	80.1	-80.34	8.20	1.39	1.76
17.9		13.3	-79.2	80.3	-80.46	8.23	1.38	1.73
18		13.2	-79.4	80.4	-80.57	8.26	1.36	1.70
18.1		13.0	-79.5	80.6	-80.69	8.29	1.35	1.66
18.2		12.9	-79.7	80.7	-80.80	8.32	1.34	1.63
18.3		12.8	-79.8	80.9	-80.91	8.34	1.33	1.60
18.4		12.6	-80.0	81.0	-81.02	8.37	1.32	1.57
18.5		12.5	-80.2	81.1	-81.13	8.40	1.31	1.54
18.6		12.4	-80.3	81.3	-81.24	8.43	1.30	1.51
18.7		12.3	-80.5	81.4	-81.34	8.45	1.28	1.48
18.8		12.1	-80.6	81.5	-81.45	8.48	1.27	1.45
18.9		12.0	-80.7	81.6	-81.55	8.50	1.26	1.43
19		11.9	-80.9	81.7	-81.65	8.53	1.25	1.40
19.1		11.7	-81.0	81.9	-81.75	8.55	1.24	1.37
19.2		11.6	-81.2	82.0	-81.85	8.58	1.23	1.34
19.3		11.5	-81.3	82.1	-81.94	8.60	1.22	1.32
19.4		11.4	-81.4	82.2	-82.04	8.63	1.21	1.29
19.5		11.3	-81.5	82.3	-82.13	8.65	1.19	1.27
19.6		11.1	-81.7	82.4	-82.23	8.67	1.18	1.24
19.7		11.0	-81.8	82.5	-82.32	8.69	1.17	1.22
19.8		10.9	-81.9	82.6	-82.41	8.71	1.16	1.20
19.9		10.8	-82.0	82.7	-82.50	8.74	1.15	1.17
20		10.7	-82.1	82.8	-82.59	8.76	1.14	1.15
20.1		10.6	-82.3	82.9	-82.68	8.78	1.13	1.13
20.2		10.5	-82.4	83.0	-82.76	8.80	1.12	1.10
20.3		10.3	-82.5	83.1	-82.85	8.82	1.11	1.08
20.4		10.2	-82.6	83.2	-82.93	8.84	1.10	1.06
20.5		10.1	-82.7	83.3	-83.02	8.86	1.09	1.04
20.6		10.0	-82.8	83.4	-83.10	8.87	1.08	1.02
20.7		9.9	-82.9	83.5	-83.18	8.89	1.07	1.00
20.8		9.8	-83.0	83.6	-83.26	8.91	1.06	0.98
20.9		9.7	-83.1	83.6	-83.34	8.93	1.05	0.96
21		9.6	-83.2	83.7	-83.41	8.95	1.04	0.94
21.1		9.5	-83.3	83.8	-83.49	8.96	1.03	0.92
21.2		9.4	-83.4	83.9	-83.57	8.98	1.02	0.90
21.3		9.3	-83.4	84.0	-83.64	9.00	1.01	0.89
21.4		9.2	-83.5	84.0	-83.72	9.01	1.00	0.87
21.5		9.1	-83.6	84.1	-83.79	9.03	0.99	0.85
21.6		9.0	-83.7	84.2	-83.86	9.04	0.98	0.83
21.7		8.9	-83.8	84.3	-83.93	9.06	0.97	0.82
21.8		8.8	-83.9	84.3	-84.00	9.07	0.96	0.80

21.9		8.7	-83.9	84.4	-84.07	9.09	0.95	0.79
22		8.6	-84.0	84.5	-84.14	9.10	0.94	0.77
22.1		8.5	-84.1	84.5	-84.21	9.12	0.93	0.75
22.2		8.4	-84.2	84.6	-84.28	9.13	0.92	0.74
22.3		8.3	-84.2	84.6	-84.34	9.15	0.91	0.72
22.4		8.3	-84.3	84.7	-84.41	9.16	0.90	0.71
22.5		8.2	-84.4	84.8	-84.47	9.17	0.89	0.70
22.6		8.1	-84.4	84.8	-84.54	9.18	0.88	0.68
22.7		8.0	-84.5	84.9	-84.60	9.20	0.87	0.67
22.8		7.9	-84.6	84.9	-84.66	9.21	0.87	0.65
22.9		7.8	-84.6	85.0	-84.72	9.22	0.86	0.64
23		7.7	-84.7	85.1	-84.78	9.23	0.85	0.63
23.1		7.6	-84.8	85.1	-84.84	9.25	0.84	0.61
23.2		7.6	-84.8	85.2	-84.90	9.26	0.83	0.60
23.3		7.5	-84.9	85.2	-84.96	9.27	0.82	0.59
23.4		7.4	-84.9	85.3	-85.02	9.28	0.81	0.58
23.5		7.3	-85.0	85.3	-85.08	9.29	0.81	0.57
23.6		7.2	-85.1	85.4	-85.13	9.30	0.80	0.55
23.7		7.2	-85.1	85.4	-85.19	9.31	0.79	0.54
23.8		7.1	-85.2	85.5	-85.25	9.32	0.78	0.53
23.9		7.0	-85.2	85.5	-85.30	9.33	0.77	0.52
24		6.9	-85.3	85.5	-85.35	9.34	0.76	0.51
24.1		6.9	-85.3	85.6	-85.41	9.35	0.76	0.50
24.2		6.8	-85.4	85.6	-85.46	9.36	0.75	0.49
24.3		6.7	-85.4	85.7	-85.51	9.37	0.74	0.48
24.4		6.6	-85.5	85.7	-85.56	9.38	0.73	0.47
24.5		6.6	-85.5	85.8	-85.61	9.39	0.73	0.46
24.6		6.5	-85.6	85.8	-85.66	9.39	0.72	0.45
24.7		6.4	-85.6	85.8	-85.71	9.40	0.71	0.44
24.8		6.3	-85.6	85.9	-85.76	9.41	0.70	0.43
24.9		6.3	-85.7	85.9	-85.81	9.42	0.70	0.42
25		6.2	-85.7	85.9	-85.86	9.43	0.69	0.42
25.1		6.1	-85.8	86.0	-85.91	9.44	0.68	0.41
25.2		6.1	-85.8	86.0	-85.95	9.44	0.67	0.40
25.3		6.0	-85.8	86.1	-86.00	9.45	0.67	0.39
25.4		5.9	-85.9	86.1	-86.04	9.46	0.66	0.38
25.5		5.9	-85.9	86.1	-86.09	9.47	0.65	0.37
25.6		5.8	-86.0	86.1	-86.13	9.47	0.65	0.37
25.7		5.7	-86.0	86.2	-86.18	9.48	0.64	0.36
25.8		5.7	-86.0	86.2	-86.22	9.49	0.63	0.35
25.9		5.6	-86.1	86.2	-86.26	9.49	0.63	0.34
26		5.6	-86.1	86.3	-86.31	9.50	0.62	0.34
26.1		5.5	-86.1	86.3	-86.35	9.51	0.61	0.33
26.2		5.4	-86.2	86.3	-86.39	9.51	0.61	0.32
26.3		5.4	-86.2	86.4	-86.43	9.52	0.60	0.32
26.4		5.3	-86.2	86.4	-86.47	9.52	0.59	0.31
26.5		5.3	-86.3	86.4	-86.51	9.53	0.59	0.30
26.6		5.2	-86.3	86.4	-86.55	9.54	0.58	0.30
26.7		5.1	-86.3	86.5	-86.59	9.54	0.57	0.29
26.8		5.1	-86.3	86.5	-86.63	9.55	0.57	0.29
26.9		5.0	-86.4	86.5	-86.67	9.55	0.56	0.28
27		5.0	-86.4	86.5	-86.70	9.56	0.56	0.27
27.1		4.9	-86.4	86.6	-86.74	9.56	0.55	0.27
27.2		4.9	-86.4	86.6	-86.78	9.57	0.54	0.26
27.3		4.8	-86.5	86.6	-86.81	9.57	0.54	0.26
27.4		4.8	-86.5	86.6	-86.85	9.58	0.53	0.25
27.5		4.7	-86.5	86.7	-86.89	9.58	0.53	0.25
27.6		4.7	-86.5	86.7	-86.92	9.59	0.52	0.24
27.7		4.6	-86.6	86.7	-86.96	9.59	0.51	0.24
27.8		4.6	-86.6	86.7	-86.99	9.60	0.51	0.23
27.9		4.5	-86.6	86.7	-87.03	9.60	0.50	0.23
28		4.5	-86.6	86.8	-87.06	9.61	0.50	0.22
28.1		4.4	-86.7	86.8	-87.09	9.61	0.49	0.22
28.2		4.4	-86.7	86.8	-87.12	9.61	0.49	0.21
28.3		4.3	-86.7	86.8	-87.16	9.62	0.48	0.21
28.4		4.3	-86.7	86.8	-87.19	9.62	0.48	0.20
28.5		4.2	-86.7	86.8	-87.22	9.63	0.47	0.20
28.6		4.2	-86.8	86.9	-87.25	9.63	0.47	0.20
28.7		4.1	-86.8	86.9	-87.28	9.63	0.46	0.19
28.8		4.1	-86.8	86.9	-87.31	9.64	0.46	0.19
28.9		4.0	-86.8	86.9	-87.34	9.64	0.45	0.18
29		4.0	-86.8	86.9	-87.37	9.64	0.45	0.18

Ottoman Turkish Bows			all the way from some 40lb to 240lb. The average draw weight is 120lb!
by Adam Karpowicz			
			I do not believe bows below 70lb were made for grown men at the time,
			but probably for women, boys and the elderly or made exclusively for targetshooting.
	avg	112.0	Also three bows equal or below 70lb, as well as nine bows over 150lb could be removed from the group.
			Then the average draw weight of the remaining 26 bows is 112lb with the standard deviation of 18lb
			It means there is a very good chance the draw weight of most battlebows was between 90lb and 130lb at 28in draw.
Arab Archery			If you have a strong bow which weighs two hundred rotls [180lbs]..
1 rotl = 0.9lbs			If your bow weighs a hundred rotls [90lbs] or more, but less than two hundred rotls..
			if the bow were sixty rotls [54lbs] in weight, the arrow should be ten dirhams [470gr (8.8gpp)]
Manchu			Ability at strength of six (probably a pull of about 80 pounds) was considered minimal for a grown man, and strength of ten (about 133 pounds) was required for participation in hunts."
http://www.man			
	avg	108.4	A 1736 report found that of 3,200 troops at the Hangzhou garrison
			about 2,200 were able to draw bows of strengths six to ten [80-133],pounds],
			137 a seven strength [93 pounds],
			and 85 a ten-strength bow [133 pounds]
			and 80 could handle bow strengths of eleven to thirteen [147-173 pounds]…
	avg	90.6	…In comparison, the 500 troops at the small Dezhou garrison acquitted themselves with honor,
			all of them being able to take a five-strength bow [67 pounds], (which means 75 could only draw 67 pounds)
			203 a six-strength [80 pounds],
			137 a seven strength [93 pounds],
			and 85 a ten-strength bow [133 pounds].
Chinese Archery by Stephen Selby pg249			In archery infantry shooting required a draw-weight of one stone and one dou [161lbs]
Song dynasty ~1064AD			and for mounted shooting, eight dou [119lbs]
1 dou = 14.9lbs			
			For mounted archery, they had three chances to hit the target mounted.
			A draw-weight of nine dou was worth five points [134lbs],
			eight dou was worth four points and seven dou [104lbs] three points
Mary Rose	avg	113.5	12x90lbs, 15x100lbs, 23x110lbs,16x120lbs,
https://www.acad			10x130lbs, 5x140lbs, 3x150lbs, 1x170lbs
1545 England			

							-0.00017516*x^4+0.02015			-1988.393071			-1987.6711339*x 0.2691 x + 429.82 x^2 - 908.252 x^3 + 1091.53 x^4 - 397.534 x^5				
					in	lb	lb calc J/lb		m	N				Jtot			
				BH	6.5	0.0	0.0	#DIV/0!	0.1660	0.00		0.0000	0	0	76.158	Jtot	
2	14	14	14		10.5	14.4	14.4	0.2453411689	0.2660	63.86		0.1000	63.85715668	3.52203566	1.410333333	J/lb	
3	18	18	18		12.4	18.5	18.4	0.3883758809	0.3160	82.10		0.1500	82.10205859	7.168363824			
4	21	20	21		14.4	21.2	21.2	0.5473767202	0.3660	94.27		0.2000	94.26532653	11.59984112			
5	23	23	23		16.4	23.6	23.4	0.7045006572	0.4160	104.91		0.2500	104.908186	16.61515977			
6	25	25	25		18.3	25.6	25.5	0.8627661813	0.4660	114.03		0.3000	114.0306369	22.11711138			
7	26	26	26		20.3	28.0	27.7	1.003488552	0.5160	124.55		0.3500	124.55016	28.09767946			
8	30	30	30.5		22.3	30.9	30.4	1.119292882	0.5660	137.60		0.4000	137.5969686	34.62313184			
9	33	34	34		24.3	34.5	33.9	1.21137726	0.6160	153.56		0.4500	153.5612577	41.8191132			
10	37	37	37		26.2	37.9	38.3	1.314068903	0.6660	168.77		0.5000	168.7653427	49.8557375			
11	42	42.5	43		28.2	43.6	43.5	1.35229668	0.7160	193.85		0.5500	193.8520828	58.93268049			
12	48	48	48		30.2	49.2	49.6	1.407254851	0.7660	218.94		0.6000	218.9388229	69.26427216			
12.6					30.2	49.7	**49.8**	1.397320978	0.7671		221.25491	0.6011	221.25491	69.50288593			
					30.9	52.2	**52.2**	1.409827063	0.7849		232.0035147	0.6189	232.0035147	73.5316225			
				current bamboo	**31.3**	**54.0**	**53.7**	1.41027725	0.7960	240.20	239.0010918	0.6300	240.20388	76.15497149			
				uncut bearpaw	31.9	55.9	**55.8**	1.427328318	0.8110		248.7332731	0.6450	248.7332731	79.81260919			



actual	reading			
kg	lb			
10	21.5	22.0462		1.025404651
15	32.7	33.0693		

		lbs	gr	gpp	fps	J/lb	vMass	Jtot/lb	Eff %
Kestrel	http://www.k	70	385	5.5	274	1.24	73.6	1.48	83.9%
		70	500	7.1	245	1.29	73.6	1.48	87.2%
		60	385	6.4	252	1.23	67.0	1.44	85.2%
		60	500	8.3	225	1.27	67.0	1.44	88.2%
Diamond Infinite E	http://bestcor	70	350	5.0					
		70	425	6.1					
	https://www.r	65	363	5.6	319	1.71			
		65	401	6.2	306	1.74			
		65	453	7.0	289	1.75			
		65	510	7.8	274	1.77			