

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	I. Bocal		Preston1: bocal could be original, "G4" and thick brass 1.1mm brail								HaleJ2	HaleJ1	WmMilhouse1	WmMilhouse2	WmMilhouse3
2	dia reed end	3.8	inside diameter of reed end of bocal										4.4	3.95	4.2
3	bocal string length (0, 1)	31	length of bocal inserted into receiver										23	25	30
4	metal bocal length top (0, 1)	320	meas. along top of bocal										327	348	322
5	metal bocal length bot (0, 1)	298	meas. along bottom of bocal										304	323	298
6	dia wj end	9.3	inside diameter of bocal										10.6	11.4	11.6
7															
8	bocal logic	2	if bocal logic = 0 => bocal is choke; if bocal logic = 1 =>choke in wing joint calc; if bocal logic = 2 => no bocal								2	2	2	2	2
9															
10															
11															
12															
13	II. Wing Joint Lengths		bocal receiver: Preston1 a choke, no bocal receiver												
14	choke bore dia.	10.7	bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bottom or receiver								9.9	10.5	10.7	10.5	10.5
15	receiver length (1, 0) (formally choke length)	80	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)								65	55	90	55	55
16	wing joint length	521	total wing joint length, including tenon and socket								522	526	529	528	520
17	tenon length	48	tenon length								48.6	45.8	41.5	44.8	41.7
18															
19	wj f2	218	dist top of wing to where tone hole enters bore (not at the center of the tone hole)								231	230	235	230	234
20	wj d	285									286	296	295	292	288
21	wj d	323									325	330	332	333	327
22															
23	bore dia. Bottom of wing joint	16.3	Need to Average, usually oval; Peston1 no								16.5	15.9	16.3	16.2	14.7
24	Bore dia. top of boot joint small side	16.6									16.6	16	16.6	17	17
25	Bore dia. top of boot joint large side	25.4									25.1	25.1	24.5	25.3	25.2
26															
27	III. Boot Lengths														
28	bi logic	1	logic=> if bi logic = 0 => plug removed; if bi logic = 1 => plug cannot be removed								1	1	1	1	1
29	bi c	95	dist from top of boot to where topmost tone hole enter bore (not at center of tone hole)								95	95	89	92	95
30	bj b	154	Preston1 finger holes very close to HaleJ2								154	155	154	157	156
31	bj a	197									196	195	196	198	195
32															
33	bttotal [Needed for both boot logics]	429	Preston1 vrfd; total length of boot, include socket, along the small bore side								439	439	432	430	429
34	bttotal [Needed for both boot logics]	429	total length of boot, include socket, along large bore side								439	439	432	430	429
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side								0	0	0	0	0
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side								0	0	0	0	0
37															
38	boots [Needed for both boot logics]	395	Preston1 could not meas. Hook length with normal wood rod, accurate								393	400	394	394	393
39	bootl [Needed for both boot logics]	395	hook length along l bore => btl-septum length = boot - septum <= calc the septum								393	400	394	394	393
40			Preston1 Cork pushed up toward septum, blocking air column												
41	boots bottom [Needed for both boot logics]	CM	use hook, dist of bore (dist on stick plus 7mm, diff between hook and bot of stick)								17	24	18.9	20	20
42	boot bottom [Needed for both boot logics]	CM	use hook, dist of bore (same as boots bot except tenon depth will be different)								17	24	18.9	20	20
43															
44	extreme bore [Needed for logic 1 only]	43	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width								46.8	44.9	44.9	43.5	44.3
45															
46	septum length exp [Need for logic 0 only]	0	dist. from very bottom of boot to septum [point between the large and small bore]								0	0	0	0	0
47	septum length calc - do not input value	34	dist. From very bottom of boot to spetum [bil - bootl]								46	39	38	36	36
48	septum length - do not input value	34	if bi logic = 0 => septum = septum exp; if bi logic = 1 => septum = septum c								46	39	38	36	36
49															
50	bore dia sep* [Needed for both boot logics]	19.7	Preston1 could not measure, used HaleJ2 septum small bore dia (assume = bore dia sep)								19.7	19.7	19.7	19.9	19.7
51	bore dia sep* [Needed for both boot logics]	20.1	septum large bore dia (assume = shore dia sep) [measure if cork can be removed; for Logic 0]								20.1	19.7	20.6	20.7	20.6
52	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug								0	0	0	0	0
53	sep width calc - do not input value	3.2	septum width; calc. => extreme bore - shore - bore								7	5.5	4.6	2.9	4
54	sep width - do not input value	3.2	if bi logic = 0 => sep width = sep width exp; if bi logic = 1 => sep width = sep								7	5.5	4.6	2.9	4
55															
56	bi q	363	dist from top of boot (socket) to where G hole enters bore (not at cent of tone hole)								361	362	353	360	356
57	bi f1	144	dist from top of boot (socket) to where F1 hole enters bore (not at cent of tone hole)								145	146	146	146	146
58															
59															
60															
61															
62															
63	IV. Tone Hole Diameters														
64	f2	4.1									5.3	4.5	4.5	4.5	6.4
65	f	5.1									6.3	5.5	5.6	5.6	4.6
66	d	4.6									5.6	5	5.3	5.3	4.8
67															
68	c	6.7									8	7.1	6.7	7.2	6.7
69	b	6									7	6.5	6.3	6.9	6
70	a	5.2	Preston1 all finger holes small								6.1	5.5	5	5.3	5.2
71	d	8.7									9.2	7.5	8.5	8.5	8
72	f1	9.8									10.3	9.8	9.5	9.5	9.2
73															
74	e1	11.1	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]								11.3	9.8	11.4	11.4	10.5
75	d1	9.9	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]								9.6	8.6	10.9	10.3	9.5
76	c1	10.9	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]								11.5	10.8	11.8	11.6	11.2
77															
78															
79															
80															
81															
82	V. Tone Hole Depths														
83	f2	26.3									24	27.5	26.9	27.2	27
84	e	27.6									24.3	26	26.5	29.5	26.7
85	d	26.8									25.6	28.8	25.7	29.5	29
86															
87	c	25.4									26.7	24.2	23.6	25	23
88	b	27.2									25.8	24	25.9	28	25.8
89	a	25.3									24.4	22.5	24.8	24.5	23.5
90	e	17.8	meas along bot tone hole wall [north wall, toward reed,t hole usually at angle]								18.2	15.2	17.8	16.5	16.8
91	f1	21.4	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]								19.6	19	27.5	25	25
92															
93	e1	11.6	e1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]								11.4	10.5	8	8	9.8
94	d1	12.8	d1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]								12	10.3	8.8	7.5	9.8
95	c1	11.3	c1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]								11.6	10	8.9	7.8	9.2
96															
97															
98															
99															
100															
101	VI. Long Joint		Preston1 There is a table along long joint												
102	ln length	577	total length of long joint								577	577	567	566	566
103	ln tenon bot	48.8	length bottom tenon on long joint [tenon going into boot joint]								47.7	47.1	44.9	44.7	45.2
104	l bot bore	24.8	long joint bottom tenon bore diameter [tenon going into boot joint]								24.8	24.8	24.9	25	24.5
105	l top bore	31	long joint top tenon bore diameter [tenon going into bell]								30.8	31.3	30.8	30.6	30
106	ln tenon top	38.1	length top tenon on long joint [tenon going into bell]								39.5	41	36.6	36.4	36.4
107	d1 distance	55	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]								58	57	52	51	53
108	f1 distance	244	dist long joint tenon to f1 [from bot of tenon to where tone hole enters bore]								237	237	242	240	240
109	c1 distance	441	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]								435	435	442	443	442
110															
111															
112															
113															
114															
115	VII. Bore diameters at Tone Holes														
116	f2	12.3									12.3	12.3	12.5	12.5	12.5
117	e	12.7									13.7	13.2	13.4	13.1	13.3
118	d	13									14	13.7	14.1	13.8	13.8
119															
120	c	17.2									17.2	16.1	16.6	16.6	16.6
121	b	17.4									17.4	17.3	17.7	17.8	17.3
122	a	18.3									18.1	18	18.3	18.3	18.1
123	e	20.3									20.4	19.8	21	21.1	21.1
124	f1	24									23.6	24.1			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
141	bell bot bore expansion (only for logic 2)		dist of bottom to maxium of expansion [including bell socket length,if bell logic=0 =>100]												
142	Outside diameter of wood at expansion		Just for David												
143	bell teton (0, 1, 0, 2)	39.5	bell socket length								41.9	41	37.2	37.3	36.3
144	bell expansion length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]												
145	belllg	69	Usually about 10mm more than line 138								69	43.5	46	31.5	36.5
146															
147															
148	IX. PITCH														
149	pitch	430	input the historical pitch of the bassoon, must input value, best guess								430	430	430	430	430
150	freq_init	380	Initial frequency range variable								380	380	380	380	380
151	delta frequency	2	frequency increment parameter								2	2	2	2	2
152	Number of frequencies	60	number of frequencies to scan for min chi sq								60	60	60	60	60
153	frequency adjust	1.05	frequency adjustment parameter								1.05	1.05	1.05	1.05	1.05
154	X. Title														
155	title		Bassoon Calculation: Preston1-O-Veriam-Wg1-WB-DNM												
156															
157			Notes on long joint bore: Preston1, normal, not considerable out of round										0		
158			Notes on boot joint bore: Preston1 good shape												
159			Notes on wing joint bore: Preston1 good shape												
160	XI. Bore Diameter Locations														
161		18	Number of diameters								19	19	16	18	15
162	Bell Bore	10.7	Initial bore diameter [do not include in line 160 counting]								9.9	10.5	10.7	10.5	10.5
163	21.7mm dia. at socket	0	dist1; measured from the bottom of the wing joint- 10mm			1					433	0	0	0	0
164	31.0mm rod 100mm from socket	400	dist2; measured from the bottom of the wing joint- 11mm			1					382	390	394	408	410
165	30.0mm rod 135mm from socket	375	Preston1 vrfd; dist3; measured from the bottom of the wing joint- 12mm			1					348	330	314	325	332
166	30.0mm rod 165mm from socket	220	Preston1 vrfd; dist4; measured from the bottom of the wing joint- 13mm			1					283	250	254	245	255
167	29.0mm rod 245mm from socket	140	dist5; measured from the bottom of the wing joint- 14mm			1					203	170	196	177	0
168	29.0mm rod 50mm from top of bell	95	dist6; measured from the bottom of the wing joint- 15mm			1					120	128	121	122	0
169	30.0mm rod 35mm from top of bell	0	dist7; measured from the bottom of the wing joint - 16mm			2					0	0	0	0	0
170	31.0mm rod 32mm from top of bell	90	dist8; measured from the top of the bootjoint - small bore side- 17mm			2					83	130	121	120	140
171	32.0mm rod 28mm from top of bell	185	dist9; measured from the top of the bootjoint - small bore side- 18mm			2					190	200	168	174	178
172	21.7mm dia.at bell end [bell flares]	260	dist10; measured from the top of the bootjoint -small bore side- 19mm			2					265	280	288	245	252
173		0	dist11; measured from the top of the bootjoint - large bore side- 20mm			3					0	310	0	0	0
174		350	dist12; measured from the top of the bootjoint - large bore side- 21mm			3					325	255	0	378	375
175		275	dist13; measured from the top of the bootjoint - large bore side- 22mm			3					225	225	295	265	300
176		205	dist14; measured from the top of the bootjoint - large bore side- 23mm			3					190	180	0	162	162
177		140	dist15; measured from the top of the bootjoint - large bore side- 24mm			3					140	163	115	108	125
178		460	dist16; measured from the top of the long joint- 25mm			4					535	530	500	525	485
179		345	Preston1 vrfd; dist17; measured from the top of the long joint- 26mm			4					382	365	394	395	415
180		265	dist18; measured from the top of the long joint- 27mm			4					300	300	295	332	330
181		230	dist19; measured from the top of the long joint- 28mm			4					225	218	242	270	250
182		190	dist20; measured from the top of the long joint- 29mm			4					175	163	187	190	160
183		75	dist21; measured from the top of the long joint- 30mm			4					108	90	104	106	0
184		0	dist22; measured from the top of the long joint- 31mm			4					0	0	0	0	0
185		0	dist23; measured from the top of the long joint- 32mm			4					0	0	0	0	0
186						31					10	10			
187											11	11			
188											12	12			
189											13	13			
190											14	14			
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206											30	30			
207											31	31			
208											32	32			