Rottenburgh-C-Cottet1-Rachor-Wg1-WB-DNM

	A	B	C	D	E	F	G	H	I
1	**I. Bocal**		Name or maker of bocal: Cottet						
2	dia reed end	4	inside diameter of reed end of bocal						
3	bocal string length (0, 1)	36.5	length of bocal inserted into receiver						
4	metal bocal length top (0, 1)	331	meas. along top of bocal						
5	metal bocal length bot (0, 1)	308	meas. along bottom of bocal						
6	dia wj end	9.2	inside diameter of bocal						
7									
8	bocal logic	0	if bocal logic = 0 => bocal is choke; if bocal logic = 1 =>choke in wing joint calc; if bocal logic = 2 => no bocal						
9									
10			Bottom bocal dia is 11.5, very beginning of wood bore 9.6 where at the very bottom of shelf of receiver						
11									
12			There is not a bocal receiver; there is a choke of 10.5 mm located 50mm down the bore from top of wing, very top of wing starts at 14 mm.						
13	**II. Wing Joint Lengths**		bocal receiver length: none						
14	choke bore dia.	9.2	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bottom or receiver						
15	receiver length (1, 0) (formally choke leng	36.5	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)						
16	wing joint length	520	total wing joint length, including tenon and socket						
17	tenon length	42.5	tenon length						
18									
19	wj f2	241	dist top of wing to where tone hole enters bore [not at the center of the tone hole]						
20	wj e	303							
21	wj d	346							
22									
23	Bore dia. Bottom of wing joint	16.8	Need to Average, usally oval						
24	Bore dia. top of boot joint small side	17.7							
25	Bore dia. top of boot joint large side	24.7							
26									
27	**III. Boot Lengths [must supply for logic 1*]**								
28	bj logic	0	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed						
29	bj c	89	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]						
30	bj b	146							
31	bj a	193							
32									
33	bjstotal [Needed for both boot logics]	426	total length of boot, include socket, along the small bore side						
34	bjltotal [Needed for both boot logics]	426	total length of boot, include socket, along large bore side						
35	plug small [Need for logic 0 only]	16.5	plug thickness, large bore side						
36	plug large [Need for logic 0 only]	16.5	plug thickness, small bore side						
37									
38	boots [Needed for both boot logics]	391	hook length along s bore => bjs-septum length = boot - septum <= calc the septum						
39	bootl [Needed for both boot logics]	391	hook length along l bore => bjl-septum length = boot - septum <= calc the septum						
40									
41	boots bottom [Needed for both boot logics	17.4	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]						
42	bootl bottom [Needed for both boot logics	17.4	use hook, dist of bore [same as boots bot except tenon depth will be different]						
43									
44	extreme bore [Needed for logic 1 only]	45.5	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width						
45									
46	septum length exp [Need for logic 0 only]	35	dist. from very bottom of boot to septum [point between the large and small bore]						
47	septum length calc - do not imput value	35	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value					
48	septum length - do not imput value	35	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = s	do not imput value					
49									
50	sbore dia sep* [Needed for both boot logic	19.6	septum small bore dia [assume = lbore dia sep] Here both bores are really the same; 19.6						
51	lbore dia sep* [Needed for both boot logics	19.6	septum large bore dia [assume = sbore dia sep] [mesure if cork can be removed; for Logic 0]						
52	sep width exp [Need for logic 0 only]	6.1	septum width; direct measurement if remove plug						
53	sep width calc - do not imput value	6.3	septum width; calc. => extreme bore - sbore - lbore	do not imput value					
54	sep width - do not imput value	6.1	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep wid	do not imput value					
55									
56	bj g	350	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]						
57	bj f1	128	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]						
58									
59			Notes on turn-around: cork is made of composite material, could add friction						
60									
61									
62									
63	**IV. Tone Hole Diameters**								
64	f2	4.5							
65	e	6.5							
66	d	6							
67									
68	c	6.9							
69	b	6.9							
70	a	6.1							
71	g	9.6	Tone hole has a 1.5 mm piece of cork on bottom of tone hole						
72	f1	9.6							
73									
74	e1	10	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						
75	d1	9.6	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						
76	c1	10.2	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						
77									
78									
79									
80									
81									
82	**V. Tone Hole Depths**								
83	f2	27							
84	e	21							
85	d	23							
86									
87	c	26							
88	b	24							
89	a	26							
90	g	15.2	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]						
91	f1	20.5	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]						
92									

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	A	B	C	D	E	F	G	H	I
93	e1	10	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]						
94	d1	9.6	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]						
95	c1	10.2	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]						
96									
97									
98									
99									
100									
101	**VI. Long Joint**		There is a table along the long joint						
102	lg_length	576	total length of long joint						
103	lg_tenon_bot	41	length bottom tenon on long joint [tenon going into boot joint]						
104	lj_bot_bore	22.5	long joint bottom tenon bore diameter [tenon going into boot joint]						
105	lj_top_bore	31.5	long joint top tenon bore diameter [tenon going into bell]						
106	lg_tenon_top	43.1	length top tenon on long joint [tenon going into bell]						
107	e1_distance	49	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]						
108	d1 distance	241	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]						
109	c1 distance	444	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]						
110									
111									
112									
113									
114									
115	**VII. Bore diameters at Tone Holes**								
116	f2	12.9							
117	e	13.8							
118	d	14.1							
119									
120	c	18							
121	b	18.5							
122	a	18.9							
123	g	20							
124	f1	23.1							
125									
126	e1	23	e1 tone hole bore diameter on long joint						
127	d1	26.5	d1 tone hole bore diameter on long joint						
128	c1	29.5	c1 tone hole bore diameter on long joint						
129									
130									
131									
132									
133									
134	**VIII. Bell**		There is a tone hole in the bell: 6.1mm, 85 mm from bell socket						
135	bell logic	2	If bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted concial bore; if bell_logic = 2 => bell expansion						
136	bell_length (0, 1, 2)	300	total length of bell [lines 141 + 144 = line 136]						
137	bell_bot_bore (0, 1, 2)	31.2	dia bore at the bottom of bell [end with socket]						
138	bell_top_bore 0, (1, 0, 2)	25	dia bore at the top of bell [where low Bb exits]						
139	bell_center_bore (only for logic 2)	33.5	dia bore at max center of expansion						
140	bell_wall (only for logic 2)		bell wall thickness, Just for David						
141	bell_bot_bore_expansion (only for logic 2)	238	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_tenon (0, 1, 0, 2)	44	bell socket length						
144	bell_expansion_length (only for logic 2)	63	distance of maxium expansion to top of bell [where Bb exits]						
145									
146									
147									
148	**IX. PITCH**								
149	pitch	415	input the historical pitch of the bassoon, must input value, best guess						
150	freq_init	380	Initial frequency range variable						
151	Delta frequency	2	frequency increment parameter						
152	Number of frequencies	60	number of frequencies to scan for min chi sq						
153	Frequency adjust	1.05	frequency adjustment parameter						
154	**X. Title**								
155	title		Bassoon Calculation: Rottenburgh-C-Cottet1-Rachor-Wg1-WB-DNM						
156									
157									
158									
159	**XI. Bore Diameter Locations**								
160		20	Number of diameters						
161		10.5	Initial bore diameter						
162		0	dist1; measured from the bottom of the wing joint- 10mm				1		
163		402	dist2; measured from the bottom of the wing joint- 11mm				1		
164		349	dist3; measured from the bottom of the wing joint- 12mm				1		
165		268	dist4; measured from the bottom of the wing joint- 13mm				1		
166		190	dist5; measured from the bottom of the wing joint- 14mm				1		
167		95	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing	16.8		1		
168		38	dist7; measured from the bottom of the wing joint- 16mm	top boot sma	17.7		1		
169		0	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot larg	24.7		2		
170		74	dist9; measured from the top of the bootjoint - small bore side- 18mm				2		
171	Yes, distance 10 and 11 is correct!	218	dist10; measured from the top of the bootjoint - small bore side- 19mm	sbore dia sep	19.6		2		
172		348	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	19.6		3		
173		275	dist12; measured from the top of the bootjoint - large bore side- 21mm				3		
174		273	dist13; measured from the top of the bootjoint - large bore side- 22mm				3		
175		531	dist14; measured from the top of the long joint- 23mm- or 160mm from bootjoint large				4		
176		481	dist15; measured from the top of the long joint- 24mm- or 91 from bod	lj_bot_bore	22.5		4		
177		420	dist16; measured from the top of the long joint- 25mm				4		
178		351	dist17; measured from the top of the long joint- 26mm				4		
179		295	dist18; measured from the top of the long joint- 27mm				4		
180		235	dist19; measured from the top of the long joint- 28mm				4		
181		175	dist20; measured from the top of the long joint- 29mm				4		
182		115	dist21; measured from the top of the long joint- 30mm				4		
183		52	dist22; measured from the top of the long joint- 31mm				4		
184		0	dist23; measured from the top of the long joint- 32mm	lj_top_bore	31.5		4		