	A	B	C	D	E	F	G	H	I	J
1	**I. Bocal**	Wg2	Original bocal; SavJeu15 No						Savaryjeune4	Savaryjeune4
2	dia reed end		inside diameter of reed end of bocal						Wg1	Wg2
3	bocal string length (0, 1)		length of bocal inserted into receiver							
4	metal bocal length top (0, 1)		meas. along top of bocal							
5	metal bocal length bot (0, 1)		meas. along bottom of bocal							
6	dia wj end		inside diameter of bocal							
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
9										
10										
11										
12										
13	**II. Wing Joint Lengths**		bocal receiver: SavJeu15 no							
14	choke bore dia.	9	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bottom or receiver;						9.4	9
15	receiver length (1, 0) (formally choke length)	35	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)						45	35
16	wing joint length	513	total wing joint length, including tenon and socket						511	516
17	tenon length	49.4	tenon length						48.7	49
18										
19	wj f2	196	dist from top of wing to where tone hole enters bore [not at the center of the tone hole]						202	208
20	wj e	294							295	298
21	wj d	332							339	343
22										
23	Bore dia. Bottom of wing joint	16.6	Need to Average, usally oval; SavJeu15 No						15.2	15.2
24	Bore dia. top of boot joint small side	15.9	SavJeu15 vrfd boot bore smaller than wing bore						16.1	16.1
25	Bore dia. top of boot joint large side	24.2							22.4	22.4
26										
27	**III. Boot Lengths**									
28	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed						1	1
29	bj c	85	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]						84	84
30	bj b	157							157	157
31	bj a	201							201	201
32										
33	bjstotal [Needed for both boot logics]	432	SavJeu15 vrfd long; total length of boot, include socket, along the small bore side, meas. with boot cap on						433	433
34	bjltotal [Needed for both boot logics]	432	total length of boot, include socket, along large bore side						433	433
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side						0	0
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side						0	0
37										
38	boots [Needed for both boot logics]	385	hook length along s bore => bjs-septum length = boot - septum <= calc the septum						386	386
39	bootl [Needed for both boot logics]	385	hook length along l bore => bjl-septum length = boot - septum <= calc the septum						386	386
40										
41	boots bottom [Needed for both boot logics]	31	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick] 24 + 7 =31						32	32
42	bootl bottom [Needed for both boot logics]	31	use hook, dist of bore [same as boots bot except tenon depth will be different]						32	32
43										
44	extreme bore [Needed for logic 1 only]	43.1	SavJeu15 vrfd; Outside dia of plug [measured] = small bore dia + large bore dia + the septum width						41.2	41.2
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
47	septum length calc - do not imput value	47	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value					47	47
48	septum length - do not imput value	47	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum c	do not imput value					47	47
49										
50	sbore dia sep* [Needed for both boot logics]	18.9	septum small bore dia [assume = lbore dia sep]						18.5	18.5
51	lbore dia sep* [Needed for both boot logics]	19.3	septum large bore dia [assume = sbore dia sep] [mesure if cork can be removed; for Logic 0]						18.9	18.9
52	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug						0	0
53	sep width calc - do not imput value	4.9	septum width; calc. => extreme bore - sbore - lbore	do not imput value					3.8	3.8
54	sep width - do not imput value	4.9	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = se	do not imput value					3.8	3.8
55										
56	bj g	338	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]						338	338
57	bj f1	149	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]						149	149
58										
59										
60										
61										
62										
63	**IV. Tone Hole Diameters**									
64	f2	5.2							5	5
65	e	6.2							6	6
66	d	5.8							5.3	5.5
67										
68	c	8							7	7
69	b	7.1							6.5	6.5
70	a	5.8							5.8	5.8
71	g	9.8							9	9
72	f1	9.1							8.8	8.8
73										
74	e1	15.3	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						15	15
75	d1	9.6	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						8.9	8.9
76	c1	15.3	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]						15	15
77										
78										
79										
80										
81										
82	**V. Tone Hole Depths**									
83	f2	52	SavJeu15 F tone holes drilled at VERY extreme angle						47	46.5
84	e	37	SavJeu15 very long finger holes						37	33
85	d	39							39	37
86										
87	c	31							29.4	29.4
88	b	31.4	SavJeu15 Boot joint body seems to be thicker than normal, this adds to length of finger holes						27.5	27.5
89	a	29.5							29	29
90	g	15.5	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]						19	19
91	f1	27	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]						19	19
92										
93	e1	7.3	e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]						7.5	7.5
94	d1	9.3	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]						8.3	8.3
95	c1	8.5	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]						7.8	7.8
96										
97										
98										
99										
100										
101	**VI. Long Joint**		SavJeu15 a table along long joint							
102	lg_length	586	total length of long joint						588	588
103	lg_tenon_bot	49.7	length bottom tenon on long joint [tenon going into boot joint]						48	48
104	lj_bot_bore	23.6	SavJeu15 OOR 23.3 x 23.9; long joint bottom tenon bore diameter [tenon going into boot joint]						23.6	23.6
105	lj_top_bore	34.8	long joint top tenon bore diameter [tenon going into bell]						34.2	34.2
106	lg_tenon_top	36.5	length top tenon on long joint [tenon going into bell]						34.5	34.5
107	e1 distance	54	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]						56	56
108	d1 distance	255	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore];						258	258
109	c1 distance	469	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore] verified						471	471
110										
111										
112										
113										
114										
115	**VII. Bore diameters at Tone Holes**									

	A	B	C	D	E	F	G	H	I	J
116	f2	11.4							11.4	11.4
117	e	12.8							12.7	12.7
118	d	13.2							13.1	13.1
119										
120	c	15.9							15.9	15.9
121	b	16.9							16.5	16.5
122	a	17.2							16.5	16.5
123	g	20							19.7	19.7
124	f1	22.1							21.9	21.9
125										
126	e1	24.1	e1 tone hole bore diameter on long joint						24.2	24.2
127	d1	26.9	d1 tone hole bore diameter on long joint						27.1	27.1
128	c1	31.7	c1 tone hole bore diameter on long joint						31.2	31.2
129										
130										
131										
132										
133										
134	**VIII. Bell**		SavJeu15 no bell tone hole:							
135	bell_logic	1	If bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted concial bore						1	1
136	bell_length (0, 1, 2)	323	total length of bell [lines 141 + 144 = line 136]						327	327
137	bell_bot_bore (0, 1, 2)	34	dia bore at the bottom of bell [end with socket]						33.9	33.9
138	bell_top_bore 0, (1, 0, 2)	33.7	dia bore at the top of bell [where low Bb exits]						34	34
139	bell_center_bore (only for logic 2)		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)		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)	39.5	bell socket length						35.4	35.4
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]							
145	Bellflg	40.5							40	40
146										
147										
148	**IX. PITCH**									
149	pitch	430	input the historical pitch of the bassoon, must input value, best guess						430	430
150	freq_init	380	Initial frequency range variable						380	380
151	Delta frequency	2	frequency increment parameter						2	2
152	Number of frequencies	60	number of frequencies to scan for min chi sq						60	60
153	Frequency adjust	1.05	frequency adjustment parameter						1.05	1.05
154	**X. Title**									
155	title		Bassoon Calculation: Savaryjeune15-O-Vleeshuis1967.001.051-Wg1-WOB-DNM							
156			dated; 1823							
157			Notes on long joint bore: Salvaryjeune15 normal, OOR in places							
158			Notes on boot joint bore: Salvaryjeune15 good							
159	**XI. Bore Diameter Locations**		Notes on wing joint bore: Salvaryjeune15 good							
160		21	Number of diameters						21	21
161	**Bell Bore**	9	Initial bore diameter						9.4	9
162	34.0mm diameter at socket	425	dist1; measured from the bottom of the wing joint- 10mm				1		400	415
163	33mm rod 93mm from socket	350	dist2; measured from the bottom of the wing joint- 11mm				1		325	330
164	32mm rod 145mm from socket	288	dist3; measured from the bottom of the wing joint- 12mm				1		283	288
165	31mm rod 178mm from socket	205	dist4; measured from the bottom of the wing joint- 13mm				1		220	230
166	31mm rod 125mm from bell	115	dist5; measured from the bottom of the wing joint- 14mm				1		110	100
167	32mm rod 75mm from bell	0	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing	16.6		1		0	0
168	33mm rod 27mm from bell	105	dist7; measured from the top of the bootjoint - small bore side- 16mm	top boot sm	15.9		2		108	108
169	33.7mm diameter at bell end	175	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot larg	24.2		2		250	250
170		307	dist9; measured from the top of the bootjoint - small bore side- 18mm;				2		325	325
171		0	dist10; measured from the top of the bootjoint - small bore side- 19mm	sbore dia sep	18.9		2		365	365
172		350	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	19.3		3		330	330
173		295	dist12; measured from the top of the bootjoint - large bore side- 21mm; yes v	Hook Length	385		3		270	270
174		220	SavJeu15 OOR; dist13; measured from the top of the bootjoint - large bore side- 22mm				3		140	140
175		98	dist14; measured from the top of the bootjoint - large bore side- 23mm				3		0	0
176		540	dist15; measured from the top of the long joint - 24mm	lj_bot_bore	23.6		4		535	535
177		465	dist16; measured from the top of the long joint- 25mm				4		455	455
178		378	dist17; measured from the top of the long joint- 26mm				4		405	405
179		318	dist18; measured from the top of the long joint- 27mm				4		330	330
180		280	dist19; measured from the top of the long joint- 28mm;				4		280	280
181		245	dist20; measured from the top of the long joint- 29mm;				4		210	210
182		192	dist21; measured from the top of the long joint- 30mm				4		160	160
183		143	dist22; measured from the top of the long joint- 31mm				4		115	115
184	33mm rod 55mm from top tenon	100	dist23; measured from the top of the long joint- 32mm;	lj_top_bore	34.8		4		70	70