

	A	B	C	D	E	F	G	H
1	I. Bocal		Original bocal, Meacham1 possibly					
2	dia reed end	4	inside diameter of reed end of bocal					
3	bocal string length (0, 1)	30	length of bocal inserted into receiver					
4	metal bocal length top (0, 1)	371	meas. along top of bocal					
5	metal bocal length bot (0, 1)	350	meas. along bottom of bocal					
6	dia wj end	9.8	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					
9			Put here choke vs receiver details???					
10								
11								
12								
13	II. Wing Joint Lengths		bocal receiver: Meacham1 No choke					
14	choke bore dia.	11.2	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 length)	61	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)					
16	wing joint length	516	total wing joint length, including tenon and socket					
17	tenon length	40.2	tenon length					
18								
19	wj f2	224	dist top of wing to where tone hole enters bore [not at the center of the tone hole]					
20	wj e	291						
21	wj d	327						
22								
23	Bore dia. Bottom of wing joint	14.6	Need to Average, usually oval, Meacham1 yes; OOR 14.1 x 15.1 vrfd					
24	Bore dia. top of boot joint small side	15.3	Not OOR, Meacham1					
25	Bore dia. top of boot joint large side	24.2	Not OOR, Meacham1					
26								
27	III. Boot Lengths							
28	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed					
29	bj c	93	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]					
30	bj b	149						
31	bj a	193						
32								
33	bjstotal [Needed for both boot logics]	425	total length of boot, include socket, along the small bore side					
34	bjltotal [Needed for both boot logics]	425	total length of boot, include socket, along large bore side					
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side					
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side					
37								
38	boots [Needed for both boot logics]	382	hook length along s bore => bis-septum length = boot - septum <= calc the septum					
39	bootl [Needed for both boot logics]	382	hook length along l bore => bjl-septum length = boot - septum <= calc the septum					
40								
41	boots bottom [Needed for both boot logics]	16	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick] 9 + 7 = 16					
42	bootl bottom [Needed for both boot logics]	16	use hook, dist of bore [same as boots bot except tenon depth will be different]					
43								
44	extreme bore [Needed for logic 1 only]	42	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width					
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]					
47	septum length calc - do not imput value	43	dist. From very bottom of boot to spetum [bjl - bootl]			do not imput value		
48	septum length - do not imput value	43	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = sep			do not imput value		
49								
50	sbore dia sep* [Needed for both boot logics]	19.3	septum small bore dia [assume = lbore dia sep]					
51	lbore dia sep* [Needed for both boot logics]	18.5	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]	0	septum width; direct measurement if remove plug					
53	sep width calc - do not imput value	4.2	septum width; calc. => extreme bore - sbore - lbore			do not imput value		
54	sep width - do not imput value	4.2	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width			do not imput value		
55								
56	bj g	353	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]					
57	bj f1	140	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]					
58								
59								
60								
61								
62								
63	IV. Tone Hole Diameters		Meacham1 small wing finger holes					
64	f2	4.2	Meacham1 vrfd					
65	e	4.7						
66	d	4.6	Meacham1 vrfd					
67								
68	c	7.1						
69	b	6.4						
70	a	5.7						
71	g	8.2	Meacham1 vrfd small					
72	f1	9						
73								
74	e1	8.7	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]					
75	d1	8.7	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	30						
84	e	28.1						
85	d	29						
86								
87	c	20.2	Meacham1 shorter finger holes on boot					
88	b	20.5						
89	a	19.7						
90	g	17.2	meas along bot tone hole wall [north wall, toward reed, tone hole usually at angle]					
91	f1	18	Meacham1 vrfd short; meas along east side tone hole wall					
92			Meacham1; vrfd, Long joint Tone holes longer, thick table					
93	e1	14	e1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					
94	d1	13.5	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]					

	A	B	C	D	E	F	G	H
95	c1	13.3	c1 tone hole depth; meas east/west with depth gauge [at center, or shortest dist]					
96								
97								
98								
99								
100								
101	VI. Long Joint		There is a table on long joint; Meacham1 yes					
102	lg length	567	total length of long joint					
103	lg tenon bot	42.3	length bottom tenon on long joint [tenon going into boot joint]					
104	lj_bot_bore	23.6	long joint bottom tenon bore diameter [tenon going into boot joint]					
105	lj_top_bore	30	long joint top tenon bore diameter [tenon going into bell]					
106	lg tenon top	41.4	length top tenon on long joint [tenon going into bell]					
107	e1 distance	55	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]					
108	d1 distance	238	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]					
109	c1 distance	430	Meacham1 vrfd short; 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	11.5						
117	e	12.3						
118	d	12.7						
119								
120	c	14.7						
121	b	15.3						
122	a	15.9						
123	g	19						
124	f1	22.3						
125								
126	e1	23	e1 tone hole bore diameter on long joint					
127	d1	25.2	d1 tone hole bore diameter on long joint					
128	c1	27.3	c1 tone hole bore diameter on long joint					
129								
130								
131								
132								
133								
134	VIII. Bell		Meacham1; There is no tone hole in the bell;					
135	bell logic	1	If bell_logic=0=>normal conical; if bell_logic = 1 => inverted conical; if bell_logic=2=>bell expansion					
136	bell length (0, 1, 2)	308	total length of bell [lines 141 + 144 = line 136]					
137	bell_bot_bore (0, 1, 2)	28.9	Meacham1 OOR 28.7 X 29.1; dia bore at the bottom of bell [end with socket]					
138	bell_top_bore (0, 1, 0, 2)	38.8	Meacham1 26.1 at 41mm down into bell; dia bore at the top of bell [where low Bb exits]					
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)	42	bell socket length					
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]					
145	bellfg	56.6	Usually about 10mm more than line 138					
146								
147								
148	IX. PITCH							
149	pitch	430	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: Meacham1-O-Peebles-Wg1-WB-DNM					
156			Meacham1 Bore not strathig taper, see notes on Extra measures					
157			Notes on long joint bore: Meacham1 not very out of round					
158			Notes on boot joint bore: Meacham1 out of round in places, not straight taper					
159	XI. Bore Diameter Locations		Notes on wing joint bore: Meacham1 normal					
160		18	Number of diameters					
161		11.2	Initial bore diameter [do not include in line 160 counting]					
162		0	dist1; measured from the bottom of the wing joint- 10mm					1
163		0	dist2; measured from the bottom of the wing joint- 11mm					1
164		260	dist3; measured from the bottom of the wing joint- 12mm					1
165		170	dist4; measured from the bottom of the wing joint- 13mm					1
166		95	Meacham1 OOR; dist5; measured from the bottom of the wing joint- 14mm					1
167		125	dist6; measured from the bottom of the wing joint- 15mm	Bottom win	14.6			2
168		180	dist7; measured from the bottom of the wing joint - 16mm	top boot sm	15.3			2
169		215	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot lar	24.2			2
170		285	dist9; measured from the top of the bootjoint - small bore side- 18mm					2
171		330	dist10; measured from the top of the bootjoint - small bore side- 19mm	sbore dia se	19.3			2
172		280	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia se	18.5			3
173		230	Meacham1 OOR; dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Length	382			3
174		163	dist13; measured from the top of the bootjoint - large bore side- 22mm					3
175		110	dist14; measured from the top of the bootjoint - large bore side- 23mm					3
176		400	dist15; measured from the top of the bootjoint - large bore side- 24mm; lj_bot_bore		23.6			4
177		375	dist16; measured from the top of the long joint- 25mm					4
178		210	Meacham1 vrfd OOR; dist17; measured from the top of the long joint- 26mm					4
179		160	dist18; measured from the top of the long joint- 27mm					4
180		100	dist19; measured from the top of the long joint- 28mm					4
181		45	dist20; measured from the top of the long joint- 29mm					4
182		0	dist21; measured from the top of the long joint- 30mm					4
183		0	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	30			4