	A	B	C	D	E	F	G	H	I	J	K	L
1	**I. Bocal**		Original bocal; Anon25 no bocal								Crone1 Leipzig	
2	dia reed end		inside diameter of reed end of bocal									
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	
9												
10												
11												
12												
13	**II. Wing Joint Lengths**		bocal receiver: Anon25 no; ring probably from wear									
14	choke bore dia.	8.9	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of bore at bottom or receiver								9.1	
15	receiver length (1, 0) (formally choke length)	68	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)								29.1	
16	wing joint length	501	total wing joint length, including tenon and socket								514	
17	tenon length	38	tenon length								38.9	
18												
19	wj f2	221	dist top of wing to where tone hole enters bore [not at the center of the tone hole]								234	
20	wj e	282									293	
21	wj d	320									342	
22												
23	Bore dia. Bottom of wing joint	15.9	Anon25 OOR 15.6 x 16.2								15.6	
24	Bore dia. top of boot joint small side	17.5									16.1	
25	Bore dia. top of boot joint large side	23.4	Anoon25 OOR 24.1 x 23.7								25.3	
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	
29	bj c	93	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]								85	
30	bj b	148									145	
31	bj a	191									191	
32												
33	bjstotal [Needed for both boot logics]	420	total length of boot, include socket, along the small bore side, mea. With boot cap removed								423	
34	bjltotal [Needed for both boot logics]	420	total length of boot, include socket, along large bore side								423	
35	plug small [Need for logic 0 only]	0	plug thickness, large bore side								0	
36	plug large [Need for logic 0 only]	0	plug thickness, small bore side								0	
37												
38	boots [Needed for both boot logics]	378	Anon25 vrfd short; hook length along s bore => bjs-septum length = boot - septum <= calc the septum								380	
39	bootl [Needed for both boot logics]	378	hook length along l bore => bjl-septum length = boot - septum <= calc the septum								380	
40												
41	boots bottom [Needed for both boot logics]	22	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick]	12 + 7= 22							24	
42	bootl bottom [Needed for both boot logics]	22	use hook, dist of bore [same as boots bot except tenon depth will be different]								24	
43												
44	extreme bore [Needed for logic 1 only]	46.5	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width								43.2	
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]									
47	septum length calc - do not imput value	42	dist. From very bottom of boot to spetum [bjl - bootl]	do not imput value							43	
48	septum length - do not imput value	42	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum cal	do not imput value							43	
49												
50	sbore dia sep* [Needed for both boot logics]	19.4	septum small bore dia [assume = lbore dia sep]								18.1	
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]								18.5	
52	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug								0	
53	sep width calc - do not imput value	7.5	septum width; calc. => extreme bore - sbore - lbore	do not imput value							6.6	
54	sep width - do not imput value	7.5	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep	do not imput value							6.6	
55												
56	bj g	345	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]								324	
57	bj f1	129	dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]								123	
58												
59												
60												
61												
62												
63	**IV. Tone Hole Diameters**											
64	f2	6.2									5.4	
65	e	6.7									5.7	
66	d	5.3									5.4	
67												
68	c	6.5									8	
69	b	7									6.9	
70	a	6									5.8	
71	g	7.6									8.5	
72	f1	9.1									9.9	
73												
74	e1	8	Anon25, could not remove low D flap, but coud measure; e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]								10.3	
75	d1	9.2	d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]								11.2	
76	c1	10.9	c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]								11.3	
77												
78												
79												
80												
81												
82	**V. Tone Hole Depths**											
83	f2	32.5									20.7	
84	e	30.5	Anon25, E finger hole not drilled into center of bore								21.2	
85	d	29.3	Anon25, D finger hole not drilled into center of bore								22.7	
86												
87	c	24									24.6	
88	b	22.5									24.9	
89	a	21.4									30.1	
90	g	17.6	meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]								15.4	
91	f1	19.4	meas along east side tone hole wall [north wall, toward reed,t hole usually at angle]								18.9	
92			Anon25 There is not a table along long joint									
93	e1	4.6	Anon25, could not remove low D flap, but could measure; e1 tone hole depth;meas east/west with deapth gauge [at center, or shortest dist]								9.3	
94	d1	5.3	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]								8.7	
95	c1	4.6	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]								9.5	
96												
97												
98												
99												
100												
101	**VI. Long Joint**											
102	lg_length	573	total length of long joint								600	
103	lg_tenon_bot	45	length bottom tenon on long joint [tenon going into boot joint]								42.6	
104	lj_bot_bore	22.7	Anon25 OOR 23.2 x 22.2; long joint bottom tenon bore diameter [tenon going into boot joint]								23.8	
105	lj_top_bore	30.1	long joint top tenon bore diameter [tenon going into bell]								32.4	
106	lg_tenon_top	35	length top tenon on long joint [tenon going into bell]								33.5	
107	e1 distance	65	Anon25, could not remove low D flap, but coud measure; dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]								60	
108	d1 distance	248	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]								261	
109	c1 distance	451	dist long joint tenon to c1 [from bot of tenon to where tone hole enters bore]								512	
110												
111												
112												
113												
114												
115	**VII. Bore diameters at Tone Holes**											
116	f2	11.1									11.6	
117	e	12									12.7	
118	d	12.8									13.5	
119												
120	c	18.1									16.3	
121	b	18.2									16.7	
122	a	18.3									17.1	
123	g	20.2									19.8	
124	f1	23									23	

	A	B	C	D	E	F	G	H	I	J	K	L
125												
126	e1	23.4	Anon25, could not remove low D flap, but coud measure; e1 tone hole bore diameter on long joint								24.6	
127	d1	25.3	1 tone hole bore diameter on long joint								27.4	
128	c1	29.5	c1 tone hole bore diameter on long joint								31.1	
129												
130												
131												
132												
133												
134	**VIII. Bell**		Anon25 no tone hole in bell									
135	bell_logic	1	If bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted concial bore; if bell_logic = 2 => bell expansion								0	
136	bell_length (0, 1, 2)	284	Anon25 vrfd, short; total length of bell [lines 141 + 144 = line 136]								295	
137	bell_bot_bore (0, 1, 2)	30.2	dia bore at the bottom of bell [end with socket]								32.5	
138	bell_top_bore 0, (1, 0, 2)	25	dia bore at the top of bell [where low Bb exits]								33.3	
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)	36.3	bell socket length								40	
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]									
145	belflg	48.9	Usually about 10mm more than line 138								49.5	
146												
147												
148	**IX. PITCH**											
149	pitch	430	input the historical pitch of the bassoon, must input value, best guess								430	
150	freq_init	380	Initial frequency range variable								380	
151	Delta frequency	2	frequency increment parameter								2	
152	Number of frequencies	60	number of frequencies to scan for min chi sq								60	
153	Frequency_adjust	1.05	frequency adjustment parameter								1.05	
154	**X. Title**											
155	title		Bassoon Calculation: Anon25-O-Markneukirchen32-Wq1-WOB-DNM									
156												
157			Notes on long joint bore: Anon25 in good shape									
158			Notes on boot joint bore: Anon25 in good shape									
159	**XI. Bore Diameter Locations**		Notes on wing join boret: Anon25 normal [OOR in a few places]									
160		18	Number of diameters								23	
161	**Bell Bore**	8.9	Initial bore diameter								9.1	
162	30.2mm dia. at socket	393	dist1; measured from the bottom of the wing joint- 10mm				1				385	
163	29mm rod, 153mm from socket	288	Anon25 vrfd gap; dist2; measured from the bottom of the wing joint- 11mm				1				322	
164	28mm rod, 185mm from socket	225	dist3; measured from the bottom of the wing joint- 12mm				1				258	
165	27mm rod, 153mm from socket	170	dist4; measured from the bottom of the wing joint- 13mm				1				212	
166	26mm rod, 235mm from socket	133	dist5; measured from the bottom of the wing joint- 14mm				1				94	
167	25.0mm dia. at bell end	108	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing	15.9		1				18	
168		0	dist7; measured from the top of the bootjoint - small bore side- 16mm	top boot sma	17.5		2				60	
169		0	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot larg	23.4		2				170	
170		80	dist9; measured from the top of the bootjoint - small bore side- 18mm				2				340	
171		250	Anon25 vrfd gap; dist10; measured from the top of the bootjoint - large bore sid	sbore dia se	19.4		2				370	
172		370	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia se	19.6		3				313	
173		288	dist12; measured from the top of the bootjoint - large bore side- 21mm				3				265	
174		196	dist13; measured from the top of the bootjoint - large bore side- 22mm	Hook length	386		3				180	
175		138	dist14; measured from the top of the bootjoint - large bore side- 23mm				3				126	
176		450	dist15; measured from the top of the long joint- 24mm	lj_bot_bore	22.7		4				565	
177		375	dist16; measured from the top of the long joint- 25mm				4				506	
178		295	dist17; measured from the top of the long joint- 26mm				4				430	
179		227	dist18; measured from the top of the long joint- 27mm				4				370	
180		175	dist19; measured from the top of the long joint- 28mm				4				322	
181		138	dist20; measured from the top of the long joint- 29mm				4				245	
182		0	dist21; measured from the top of the long joint- 30mm				4				219	
183		0	dist22; measured from the top of the long joint- 31mm				4				125	
184		0	dist23; measured from the top of the long joint- 32mm	lj_top_bore	30.1		4				8	
185											10	
186											11	
187											12	
188											13	
189											14	
190											15	
191											16	
192											17	
193											18	
194											19	
195											20	
196											21	
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204											29	
205											30	
206											31	
207											32	