

	A	B	C	D	E	F	G
1	I. Bocal		Original bocal; AdlerFG1 no bocal				
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				
9							
10							
11							
12							
13	II. Wing Joint Lengths		bocal receiver: AdlerFG1 No				
14	choke bore dia.	10.2	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)	52	logic 1; length of choke from top of wing joint; logic 0; length of receiver (same as string length)				
16	wing joint length	51.1	total wing joint length, including tenon and socket				
17	tenon length	49	tenon length				
18							
19	wj f2	219	dist top of wing to where tone hole enters bore [not at the center of the tone hole]				
20	wj e	292					
21	wj d	342	AdlerFG1 vrfd; f and d tone holes at fairly steep angle				
22							
23	Bore dia. Bottom of wing joint	15.4	AdlerFG1 verified small; need to Average, no				
24	Bore dia. top of boot joint small side	16					
25	Bore dia. top of boot joint large side	25.1					
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	81	verified; dist from top of boot to where topmost tone hole enter bore [not at center of tone hole]				
30	bj b	154					
31	bj a	198					
32			AdlerFG1 meas. With boot cap removed				
33	bistotal [Needed for both boot logics]	433	total length of boot, include socket, along the small bore side,				
34	bjtotal [Needed for both boot logics]	433	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]	386	hook length along s bore => bjs-septum length = boot - septum <= calc the septum				
39	bootl [Needed for both boot logics]	386	hook length along l bore => bj1-septum length = boot - septum <= calc the septum				
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]				
42	bootl bottom [Needed for both boot logics]	22	use hook, dist of bore [same as boots bot except tenon depth will be different] 15 + 7=20				
43							
44	extreme bore [Needed for logic 1 only]	41.8	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	47	dist. From very bottom of boot to spetum [bj1 - bootl]			do not imput value	
48	septum length - do not imput value	47	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum calc			do not imput value	
49							
50	sbore dia sep* [Needed for both boot logics]	18.6	septum small bore dia [assume = lbore dia sep]				
51	lbore dia sep* [Needed for both boot logics]	19.4	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	3.8	septum width; calc. => extreme bore - sbore - lbore			do not imput value	
54	sep width - do not imput value	3.8	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep width calc			do not imput value	
55							
56	bj g	336	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
57	bj f1	142	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						
64	f2	6.5					
65	e	5.4					
66	d	5.5					
67							
68	c	8.6					
69	b	7.4					
70	a	6.1					
71	g	9.6					
72	f1	10.1					
73			AdlerFG1 large tone holes on long joint				
74	e1	13.4	e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]				
75	d1	8.7	10.1; d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater]				
76	c1	15	15; 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	37	AdlerFG1, f and d tone holes drilled at extreme angle				
84	e	27.5					
85	d	33.5					
86							
87	c	32	AdlerFG1 c tone hole not drilled into center of bore				
88	b	29					
89	a	31.5	AdlerFG1 a tone hole not drilled into center of bore				
90	g	17	meas along bot tone hole wall [north wall, toward reed, tone hole usually at angle]				
91	f1	29	AdlerFG1 vrfd, drilled at extreme angle down toward boot; meas along east side tone hole wall				
92							
93	e1	7	e1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				
94	d1	8	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				
95	c1	8.3	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				
96							
97							
98							
99							
100							
101	VI. Long Joint		AdlerFG1 a table along long joint				
102	lg_length	589	total length of long joint				
103	lg_tenon_bot	49.5	length bottom tenon on long joint [tenon going into boot joint]				
104	li_bot_bore	25	long joint bottom tenon bore diameter [tenon going into boot joint]				

	A	B	C	D	E	F	G
105	lj_top_bore	34.3	long joint top tenon bore diameter [tenon going into bell]				
106	lg_tenon_top	42.7	length top tenon on long joint [tenon going into bell]				
107	e1_distance	61	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]				
108	d1_distance	258	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]				
109	c1_distance	469	AdlerFG1 verified; 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	12.1					
117	e	13.5					
118	d	14.2					
119							
120	c	16.8					
121	b	17.4					
122	a	17.6					
123	g	20.1					
124	f1	23.1					
125							
126	e1	25.5	e1 tone hole bore diameter on long joint				
127	d1	28.7	d1 tone hole bore diameter on long joint				
128	c1	31.8	c1 tone hole bore diameter on long joint				
129							
130							
131							
132							
133							
134	VIII. Bell		AdlerFG1 no tone hole in the bell				
135	bell_logic	1	if bell_logic = 0 => normal conical bore; if bell_logic = 1 => inverted conical bore; if bell_logic = 2 => bell expansion				
136	bell_length (0, 1, 2)	334	total length of bell [lines 141 + 144 = line 136]				
137	bell_bot_bore (0, 1, 2)	34	AdlerFG1 verified; dia bore at the bottom of bell [end with socket]				
138	bell_top_bore (0, 1, 0, 2)	32	AdlerFG1 OOR; 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)	42.5	bell socket length				
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]				
145	bellfg	62					
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: AdlerFG1-O-BrusMMDK0018-Wg1-WOB-DNM				
156							
157			Notes on long joint bore: AdlerFG1_good				
158			Notes on boot joint bore: AdlerFG1_good				
159	XI. Bore Diameter Locations		Notes on wing joint bore: AdlerFG1_good				
160		19	Number of diameters				
161	Bell Bore	10.2	Initial bore diameter [do not include in line 160 counting]				
162	34.0mm dia. at socket	0	dist1; measured from the bottom of the wing joint- 10mm				1
163	33mm rod 80mm from socket	420	dist2; measured from the bottom of the wing joint- 11mm				1
164	33.5mm rod 100mm from socket	300	dist3; measured from the bottom of the wing joint- 12mm				1
165	32.0mm dia.at bell end	265	dist4; measured from the bottom of the wing joint- 13mm				1
166		192	dist5; measured from the bottom of the wing joint- 14mm				1
167		0	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing jt	15.4		1
168		0	dist7; measured from the top of the bootjoint - small bore side- 16mm	top boot small	16		2
169		98	dist8; measured from the top of the bootjoint - small bore side- 17mm	top boot large	25.1		2
170		240	dist9; measured from the top of the bootjoint - small bore side- 18mm				2
171		0	dist10; measured from the top of the bootjoint - large bore side- 19mm	sbore dia sep	18.6		3
172		358	dist11; measured from the top of the bootjoint - large bore side- 20mm	lbore dia sep	19.4		3
173		280	dist12; measured from the top of the bootjoint - large bore side- 21mm	Hook Length	386		3
174		205	dist13; measured from the top of the bootjoint - large bore side- 22mm				3
175		164	dist14; measured from the top of the bootjoint - large bore side- 23mm				3
176		110	dist15; measured from the top of the long joint- 24mm	lj_bot_bore	25		3
177		560	dist16; measured from the top of the long joint- 25mm				4
178		490	dist17; measured from the top of the long joint- 26mm				4
179		420	dist18; measured from the top of the long joint- 27mm				4
180		360	dist19; measured from the top of the long joint- 28mm				4
181		310	dist20; measured from the top of the long joint- 29mm				4
182		250	dist21; measured from the top of the long joint- 30mm				4
183		200	dist22; measured from the top of the long joint- 31mm				4
184		95	dist23; measured from the top of the long joint- 32mm	lj_top_bore	34.3		4