\vdash	Α	В	C	D	Е	F	G
1	I. Bocal		Original bocal; SavPere7 No				
	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				
	dia wj end		inside diameter of bocal				
7							
	bocal logic	2	if bocal logic = $0 \Rightarrow$ bocal is choke; if bocal logic = $1 \Rightarrow$ choke in wing joint calc; if bocal	ocal logic = 2 = 3	no ho	cal	
9	bocar rogic		in bocal togic of a bocal is choice in bocal togic of a choice in wing joint care, in b	l l	50	-	
10							
11						_	
12							
	II. Wing Joint Lengths		bocal receiver: Savpere7, no; just a slight slelf where metal bocal receiver stops				
	choke bore dia.	9.2	logic 1; bore diameter of choke; logic 0; either diameter bocal bottom or beginning of		or rece	iver	
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 st	ring length)			
16	wing joint length	503	total wing joint length, including tenon and socket				
17	tenon length	47.7	tenon length				
18							
19	wj f2	198	Savpere7, vrfd; dist from bottom of wing (not top as usual) to where tone hole enters	bore			
20	wi e	287					
	wj d	328					
22	W) U	320					
23	Bore dia. Bottom of wing joint	15	Need to Average, usally oval; Savpere7 14.7 x 15.3				
24		15.2	Need to Average, dsally oval, Savperer 14.7 x 15.5				
						-	
	Bore dia. top of boot joint large side	23					
26	TIT Book Lought -					-	
	III. Boot Lengths		India a State and Control of the Con			\vdash	
	bj logic	1	logic=> if bj logic = 0 => plug removed; if bj logic = 1 => plug cannot be removed				
	bj c	88	dist from top of boot to where topmost tone hole enter bore [not at center of tone hole	ej			
	bj b	155					
	bj a	195					
32							
33	bjstotal [Needed for both boot logics]	432	total length of boot, include socket, along the small bore side				
34	bjltotal [Needed for both boot logics]	432	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	plag large [Need for logic o omy]		pray emericosy small bore side				
	boots [Needed for both boot logics]	390	hook length along s bore => bjs-septum length = boot - septum <= calc the septum				
39		390	hook length along I bore => bjl-septum length = boot - septum <= calc the septum				
40	booti [iveeded for both boot logics]	330	Hook length along I bore => bji septum length = boot = septum <= calc the septum				
	boots bottom [Needed for both boot logics]	27	use hook, dist of bore [dist on stick plus 7mm, diff between hook and bot of stick] 20	+ 7 - 27			
				+ / = 2/			
42	bootl bottom [Needed for both boot logics]	27	use hook, dist of bore [same as boots bot except tenon depth will be different]				
43							
	extreme bore [Needed for logic 1 only]	41.5	Outside dia of plug [measured] = small bore dia + large bore dia + the septum width				
45							
	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 va			
48	septum length - do not imput value	42	if bj logic = 0 => septum = septum exp; if bj logic = 1 => septum = septum calc	do not imput va	lue		
49							
50	sbore dia sep* [Needed for both boot logics]	18.3	septum small bore dia [assume = Ibore dia sep]				
51		18.8	septum large bore dia [assume = sbore dia sep] [mesure if cork can be removed; for	Logic 01			
	sep width exp [Need for logic 0 only]	0	septum width; direct measurement if remove plug				
52			septum width; calc. => extreme bore - sbore - lbore			_	
52 53				do not imput va	lue		
53	sep width calc - do not imput value	4.4	lit hi logic = () => sen width = sen width exp. it hi logic = 1 => sen width = sen width	do not imput va			
53 54		4.4	if bj logic = 0 => sep width = sep width exp; if bj logic = 1 => sep width = sep width				
53 54 55	sep width calc - do not imput value sep width - do not imput value	4.4					
53 54 55 56	sep width calc - do not imput value sep width - do not imput value bj g	335	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57	sep width calc - do not imput value sep width - do not imput value	4.4					
53 54 55 56 57 58	sep width calc - do not imput value sep width - do not imput value bj g	335	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59	sep width calc - do not imput value sep width - do not imput value bj g	335	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59	sep width calc - do not imput value sep width - do not imput value bj g	335	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60	sep width calc - do not imput value sep width - do not imput value bj g	335	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62	sep width calc - do not imput value sep width - do not imput value bj g bj f1	335	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters	4.4 335 143	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2	4.4 335 143 5.2	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2	4.4 335 143 5.2 6.6	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2	4.4 335 143 5.2	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d	4.4 335 143 5.2 6.6 5.2	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d	4.4 335 143 5.2 6.6 5.2 7.3	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d	4.4 335 143 5.2 6.6 5.2 7.3 6.9	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d c b a	4.4 335 143 5.2 6.6 5.2 7.3 6.9 5.9	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d c b a g	5.2 6.6 5.2 7.3 6.9 9.7	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 970 71	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d c b a g	4.4 335 143 5.2 6.6 5.2 7.3 6.9 5.9	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole] dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d c b a g f1	5.2 6.6 5.2 7.3 6.9 9.7 9.5	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole] dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole] [Note: The content of the hole of the content of tone hole] [Note: The content of tone hole]				
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d c b a g f1	5.2 6.6 5.2 7.3 6.9 9.7	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole] dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole] [Note: The enters bore in th	do not imput va			
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d c b a g f1	5.2 6.6 5.2 7.3 6.9 9.7 9.5	dist from top of boot (socket) to where G hole enters bore [not at cent of tone hole] dist from top of boot (socket) to where F1 hole enters bore [not at cent of tone hole] [Note: The content of the hole of the content of tone hole] [Note: The content of tone hole]	do not imput va			
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53 54 55 56 57 58 60 61 62 63 64 65 66 67 70 71 72 73 74 75 76 81 82 83 84 85	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d c b a g f1 e1 d1 c1 V. Tone Hole Depths	4.4 335 143 5.2 6.6 5.2 7.3 6.9 9.7 9.5 14.2 9.5 13.5	Savpere7, three long joint tone holes all round, not oblong e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c2 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c3 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] Savpere7, very long tone holes	do not imput va			
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53 54 55 56 57 60 61 62 63 64 65 66 67 70 71 72 73 74 75 77 78 80 81 82 83 84 85 86 89 80 80 80 80 80 80 80 80 80 80	sep width calc - do not imput value sep width - do not imput value bj g bj fl IV. Tone Hole Diameters f2 e d c b a g f1 e1 d1 c1 V. Tone Hole Depths f2 e d d c b a	4.4 335 143 5.2 6.6 5.2 7.3 6.9 9.7 9.5 14.2 9.5 13.5 45.5 38.5 36.7	Savpere7, three long joint tone holes all round, not oblong e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c2 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c3 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c4 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c5 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c6 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c7 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] Savpere7, very long tone holes Savpere7, vrfd, F tone holes drilled at fairly extreme angle Savpere7, vrfd Savpere7, A tone holes drilled at fairly extreme angle	do not imput va			
53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 70 71 72 73 74 75 76 77 80 81 82 83 84 85 86 87 88 89 99 99 90 90 90 90 90 90 90 9	sep width calc - do not imput value sep width - do not imput value bj g bj f1 IV. Tone Hole Diameters f2 e d d c b b a g f1 e1 d1 c1 V. Tone Hole Depths f2 e d d c	4.4 335 143 5.2 6.6 5.2 7.3 6.9 5.9 9.7 9.5 14.2 9.5 13.5 45.5 38.5 36.7 26 28 29 315.8	Savpere7, three long joint tone holes all round, not oblong e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c2 tone hole dia, on long diated to average NS and EW dias, NS usually greater] c3 tone hole dia, on long diated to average NS and EW dias, NS usually greater] c4 tone hole dia, on long diated to average NS and EW dias, NS usually greater] c5 tone hole dia, on long diated to average NS and EW dias, NS usually greater] Savpere7, very long tone holes Savpere7, very long tone holes Savpere7, vrfd, F tone holes drilled at fairly extreme angle Savpere7, vrfd Savpere7, A tone holes drilled at fairly extreme angle meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]	do not imput va			
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53 54 55 56 57 60 61 62 63 64 65 66 70 71 72 73 74 75 76 77 78 80 81 82 83 84 85 86 89 99 99 99 90 90 90 90 90 90 9	sep width calc - do not imput value sep width - do not imput value bj g bj fl IV. Tone Hole Diameters f2 e d d c b a g f1 e1 d1 c1 V. Tone Hole Depths f2 e d d	4.4 335 143 5.2 6.6 5.2 7.3 6.9 5.9 9.7 9.5 14.2 9.5 13.5 45.5 38.5 36.7 26 28 29 315.8	Savpere7, three long joint tone holes all round, not oblong e1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] d1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c1 tone hole dia, on long joint [need to average NS and EW dias, NS usually greater] c2 tone hole dia, on long diated to average NS and EW dias, NS usually greater] c3 tone hole dia, on long diated to average NS and EW dias, NS usually greater] c4 tone hole dia, on long diated to average NS and EW dias, NS usually greater] c5 tone hole dia, on long diated to average NS and EW dias, NS usually greater] Savpere7, very long tone holes Savpere7, very long tone holes Savpere7, vrfd, F tone holes drilled at fairly extreme angle Savpere7, vrfd Savpere7, A tone holes drilled at fairly extreme angle meas along bot tone hole wall [north wall, toward reed,tone hole usually at angle]	do not imput va			

_			•		_		_
-	A A	10 F	C	D	É	F	G
94 95	c1	10.5 9.8	d1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				
96	CI	9.0	c1 tone hole depth; meas east/west with deapth gauge [at center, or shortest dist]				
97							
98							
99							
100							
	VI. Long Joint		Savpere7, There is a table along long joint				
	lg length	578	Savpere7, vrfd short; total length of long joint				
103	lg_tenon_bot	47	length bottom tenon on long joint [tenon going into boot joint]				
104	lj_bot_bore	23.9	long joint bottom tenon bore diameter [tenon going into boot joint]				
105	lj_top_bore	32.5	long joint top tenon bore diameter [tenon going into bell]				
	lg_tenon_top	35.3	length top tenon on long joint [tenon going into bell]				
	e1 distance	53	dist long joint tenon to e1 [from bot of tenon to where tone hole enters bore]				
	d1 distance	252	dist long joint tenon to d1 [from bot of tenon to where tone hole enters bore]				
	c1 distance	466	Savpere7, 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 Para diameters at Tana Halas					\vdash	
	VII. Bore diameters at Tone Holes	11.5					
116 117	ρ	11.5 12.6				\vdash	
118	d	13.1				\vdash	
119	u .	13.1				\vdash	
120	С	14.9	Savpere7, vrfd				
121	b	16	The property of the second sec				
122	a	16.2					
123	g	19.4					
124	f1	21.7					
125							
126	e1	25.1	e1 tone hole bore diameter on long joint				
127		27.5	d1 tone hole bore diameter on long joint				
128	c1	30.5	c1 tone hole bore diameter on long joint				
129							
130						\vdash	
131						\vdash	
132							
133	VIII. Bell		Pall tong holas Caynara 7 No.			\vdash	
		0	Bell tone hole:Savpere7 No If hell, logic = 0 => pormal copical: if hell, logic = 1 =>inverted concial: if hell, logic =	- 2- Shell overs		\vdash	
	bell length (0, 1, 2)	331	If bell_logic = $0 \Rightarrow \text{normal conical}$; if bell_logic = $1 \Rightarrow \text{inverted concial}$; if bell_logic : total length of bell [lines $141 + 144 = \text{line } 136$]	- ∠=>beli expan	5	\vdash	
	bell_length (0, 1, 2) bell_bot_bore (0, 1, 2)	32.4	dia bore at the bottom of bell [end with socket]			\vdash	
	bell_top_bore 0, (1, 0, 2)	32.4	Savpere7, 32.5 x 33.1; dia bore at the top of bell [where low Bb exits]			\vdash	
	bell_center_bore (only for logic 2)	J2.0	dia bore at max center of expansion			\vdash	
	bell_wall (only for logic 2)		bell wall thickness, Just for David			\vdash	
	bell_bot_bore_expansion (only for logic 2)		dist of bottom to maxium of expansion [including bell socket length,if bell logic=0 =>	1001			
	Outside diameter of wood at expansion		Just for David				
143	bell_tenon (0, 1, 0, 2)	36.1	bell socket length				
144	bell_expansion_length (only for logic 2)		distance of maxium expansion to top of bell [where Bb exits]				
	Bellflg	42.1					
146							
147							
	IX. PITCH						
	pitch	430	input the historical pitch of the bassoon, must input value, best guess				
150	freq_init	380	Initial frequency range variable			$\vdash \vdash$	
	Delta frequency	2	frequency increment parameter				
	Number of frequencies	60	number of frequencies to scan for min chi sq			\vdash	
	Frequency adjust	1.05	frequency adjustment parameter			\vdash	
155	X. Title		Passage Calculation: Sovermore 7 O Kenn West WOR DAM			\vdash	
156	uuc		Bassoon Calculation: Savarypère7-O-Kopp-Wg1-WOB-DNM Dated on boot 1818			\vdash	
157			Notes on long joint bore: Savpere7, out of round in places			\vdash	
158			Notes on boot joint bore: Savpere7, good				
	XI. Bore Diameter Locations		Notes on wing joint bore: Savpere7, Normal				
160		21	Number of diameters				
161	Bell Bore	9.2	Initial bore diameter				
	32.4mm dia. at socket	415	dist1; measured from the bottom of the wing joint- 10mm				1
	32mm rod 55mm from socket	335	dist2; measured from the bottom of the wing joint- 11mm				1
	31mm rod 93mm from socket	280	dist3; measured from the bottom of the wing joint- 12mm				1
165	30mm rod 148mm from socket	188	dist4; measured from the bottom of the wing joint- 13mm				1
166	29.5mm rod 160mm from socket	110	Savpere7, vrfd; dist5; measured from the bottom of the wing joint- 14mm	5			1
	30mm rod 118mm from top of bell 31mm rod 80mm from top of bell	170	dist6; measured from the bottom of the wing joint- 15mm	Bottom wing jt	15	\vdash	1
	31mm rod 80mm from top of bell 32mm rod 33mm from top of bell	170 245	Savpere7, OOR 160 x 180; dist7; measured from the top of the bootjoint - small bore dist8; measured from the top of the bootjoint - small bore side- 17mm		15.2	-	2
	32.8mm rod 33mm from top of bell 32.8mm dia.at bell end	330	Savpere7, OOR 320 x 340, dist9; measured from the top of the bootjoint - small bore	top boot large	23	\vdash	2
171	52.6mm dia.ac bell ellu	380	dist10; measured from the top of the bootjoint - large bore side- 19mm	sbore dia sep	18.3	\vdash	3
172		320	dist11; measured from the top of the bootjoint - large bore side- 19fffff dist11; measured from the top of the bootjoint - large bore side- 20mm	Ibore dia sep	18.8	\vdash	3
173		200	dist12; measured from the top of the bootjoint - large bore side- 20mm	issic dia sep	10.0	\vdash	3
174		152	dist13; measured from the top of the bootjoint - large bore side- 22mm				3
175		0	dist14; measured from the top of the bootjoint - large bore side- 23mm				3
176		550	dist15; measured from the top of the long joint - 24mm	lj_bot_bore	23.9		4
177		527	dist16; measured from the top of the long joint- 25mm				4
178		484	dist17; measured from the top of the long joint- 26mm				4
179		368	Savpere7, OOR 345 x 390; dist18; measured from the top of the long joint- 27mm				4
180		250	Savpere7, vrfd, OOR 240 x 260; dist19; measured from the top of the long joint- 28n				4
		170	Savpere7, OOR 160 x 180; dist20; measured from the top of the long joint- 29mm; v				4
181			Savpere7, OOR 120 x 150; dist21; measured from the top of the long joint- 30mm		_	ıΤ	4
182		135				_	
		95 30	dist22; measured from the top of the long joint- 31mm dist23; measured from the top of the long joint- 32mm	lj top bore	32.5		4