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<u>Table of contents</u>	page
List of figures.....	ix
List of video.....	xiv
List of audio.....	xv
Nomenclature of the octaves.....	xvi
Key nomenclature system.....	xvii
Glossary.....	xx
 CHAPTER 1 – Introduction, parameters, and guidelines	 1
1.1 Introduction	1
1.2 Parameters of the instrument.....	3
1.2.1 Transposition and music notation systems.....	3
1.2.2 The ambitus	6
1.2.3 Build systems: Oehler, Boehm, and ‘Reform’ Boehm	7
1.2.4 Roots and overtones	10
1.2.5 The ‘break’	12
1.2.6 The lowest fifth	12
1.3 Guidelines for the performer.....	13
1.3.1 The embouchure	13
1.3.1.1 The lower lip: pressure versus position	13
1.3.1.2 Different forms of embouchure manipulation.....	15
1.3.2 Breathing and blowing.....	18
1.3.3 Articulation	22
1.3.3.1 Position and part of the tongue	23
1.3.3.2 Staccato	23
1.3.3.3 Portato and legato.....	25
1.3.3.4 Half-tonguing.....	27
1.3.3.5 Slap tonguing	28

1.3.3.6 Air only	30
1.3.3.7 Articulation and microtonality	30
1.4 Summary and conclusions	31
 CHAPTER 2 – Historical aspects	 32
2.1 Introduction	32
2.2 Invention and development	32
2.3 Adolphe Sax	35
2.4 Early players and repertoire	39
2.5 The bass clarinet ‘revolution’	41
2.5.1 Eric Dolphy	41
2.5.2 Josef Horák	44
2.5.2.1 Alois Hába	45
2.5.3 Harry Sparnaay	49
2.5.3.1 Jos Kunst and Brian Ferneyhough	50
2.6 Summary and conclusions	55
 CHAPTER 3 – Microtones: equal divisions of the tone	 56
3.1 Introduction	56
3.2 Quartertones	57
3.2.1 Existing literature	58
3.2.1.1 Notation	58
3.2.1.2 Fingering patterns	60
3.2.1.3 Range, missing pitches, and accuracy	72
3.2.1.4 Hand position and keywork	75
3.2.1.5 Additional information	76
3.2.2 Towards a definitive quartertone chart	77
3.2.3 Technical aspects	80
3.2.4 Preferred notation	81

3.2.5 Results	83
3.3 Eighth-tones	85
3.3.1 Towards a definitive eighth-tone chart	85
3.3.2 Notation and preferred notation	86
3.3.3 Results	88
3.4 Applications	88
3.4.1 Domínguez: <i>Cuerpo Negro</i>	89
3.4.2 Own compositions	92
3.4.2.1 Bok: <i>Fluctuations I</i>	93
3.4.2.2 Bok: <i>ANNalogy</i>	95
3.4.2.3 Bok: <i>E-A-E</i>	98
3.4.2.4 Bok: <i>smaller change</i>	100
3.5 Summary and conclusions	101
 CHAPTER 4 – Microtones: unequal divisions of the tone	 102
4.1 31-tone tuning	102
4.1.1 The Fokker organ concert	102
4.1.1.1 31-tone fingering pattern chart	102
4.1.1.2 Notation	105
4.1.1.3 Uijlenhoet: <i>Radio Istria</i>	106
4.1.2 Towards a definitive 31-tone fingering pattern chart	108
4.1.3 Preferred notation	109
4.2 Applications	112
4.2.1 Téhéricsen: <i>Progression Bureaucratique</i>	113
4.2.2 Laufer: <i>verse & refrain</i>	117
4.2.3 Redgate: new work	123
4.2.4 The use and combinability of fingering patterns from Appendices D, E, and F	128
4.2.5 Own compositions	131

4.2.5.1 Bok: <i>Homage</i>	131
4.2.5.2 Bok: <i>GIANT nano Steps</i>	132
4.2.5.3 Bok: <i>Microclimate I</i>	133
4.2.5.4 Bok: <i>smaller change</i>	135
4.2.5.5 Bok: <i>small change</i>	136
4.3 Summary and conclusions	140
 CHAPTER 5 – The inherent microtonality of the bass clarinet.....	141
5.1 Introduction	141
5.2 The root-overtone approach.....	141
5.2.1 The microtonal effects of using different root fingering patterns	144
5.2.2 Carter's <i>Steep Steps</i> : an analysis to highlight issues with the use of the root-overtone system	148
5.3 Additional microtonal variants of root-overtone sounds.....	151
5.3.1 Type 1 multiphonics	154
5.4 Applications.....	156
5.4.1 Mc Laughlin: <i>a point on many lines</i>	156
5.4.2 Domínguez: <i>Cuerpo Negro</i>	160
5.4.3 Laufer: <i>verse & refrain</i>	164
5.4.4 Own compositions.....	166
5.4.4.1 Bok: <i>There is a place for multiphonics</i>	166
5.4.4.2 Bok: <i>Microclimate I</i>	168
5.4.4.3 Bok: <i>smaller change</i>	169
5.5 Summary and conclusions	171
 CHAPTER 6 – Conclusion	172
 Bibliography	175

Appendix A1 – Review of quartertone fingering patterns	181
Appendix A2 – Overview of pitch deviations per note	331
Appendix A3 – Pitch deviation	338
Appendix B – Quartertone scale	339
Appendix C – Eighth-tone scale	361
Appendix D – 31-tone scale version 1	404
Appendix E – 31-tone scale version 2	423
Appendix F – 31-tone scale definitive version	447
Appendix G1 – Overtone series pitch measurements	471
Appendix G2 – Comparison of harmonic series frequencies	476
Appendix G3 – Overtone manoeuvrability	477
 Acknowledgements	 478
Summary	
The deep-rooted microtonality of the bass clarinet	480
Samenvatting	
De diepgewortelde microtonaliteit van de basklarinet	483
Curriculum vitae	486
List of microtonal compositions	488

List of figures

page

1. Téhéricsen (2016) an extract from <i>Progression Bureaucratique</i> written in French notation.....	4
2. The same extract (Figure 1) written in German notation.....	4
3. The bass clarinet ambitus in B $\flat$ and in C	6
4. The Oehler-system bass clarinet (left) and the Boehm-system bass clarinet (right)	8
5. Necks and mouthpieces: Oehler-system bass clarinet (bottom) and Boehm-system bass clarinet (top)	9
6. The overtone series of the bass clarinet based on the root E1	10
7. G $\sharp$ 3 based on root C $\sharp$ 2 and D4 based on root B $\flat$ 1	11
8. Four different pitches using the fingering pattern for A2	14
9. Fingering pattern for G3.....	17
10. Fingering pattern for G $\sharp$ 3 (31-tone)	17
11. Diagram highlighting (in green) the part of the tongue used for staccato playing	23
12. Diagram of the position of the tongue (against the reed) used for staccato articulation	24
13. Pellegrino (2009, p.9), example of playing staccato in the higher register	25
14. Diagram highlighting (in green) the part of the tongue used for portato and legato playing.....	26
15. Diagram of the position of the tongue used for portato and legato articulation.....	26
16. Diagram highlighting (in green) the part of the tongue used for half-tonguing	27
17. Diagram of the position of the tongue used for half tonguing	27
18. Diagram highlighting (in green) the part of the tongue used for slap-tonguing	28
19. Diagram of the position of the tongue on the reed used for slap-tonguing	29
20. Hoeprich (2008, p.261), image of Desfontenelles's bass clarinet.....	34
21. Hoeprich (2008, p.265), Belgian patent drawing for a new bass clarinet by Adolphe Sax (Brussels, 1838, Belgian patent 21.06.1838, Nr. 3739/1051)	37

22. Kučera (1967/68, p.2), <i>Duodramma</i> , bar 1, bass clarinet part (G4 brought up by a lip glissando to A4).....	45
23. Hába (1964), <i>Suita</i> op. 96, title page of the manuscript.....	46
24. Hába (1964), <i>Suita</i> op. 96, second movement, bars 16-17	47
25. Example of Horák's fingering patterns for sixth-tones in bar 16 of Hába's <i>Suita</i> op. 96 (1964)	48
26. Kunst (1972, p.4), <i>Solo Identity I</i> , bars 31-32.....	50
27. Kunst (1972, p.7), <i>Solo Identity I</i> , bars 67-68.....	50
28. Sparnaay's fingering patterns for Kunst, <i>Solo Identity I</i> , bars 31-32.....	51
29. Albach's fingering patterns for Kunst, <i>Solo Identity I</i> , bars 31-32.....	51
30. Sparnaay's fingering patterns for Kunst, <i>Solo Identity I</i> , bars 67-68.....	52
31. Albach's fingering patterns for Kunst, <i>Solo Identity I</i> , bars 67-68.....	52
32. Ferneyhough (1971-1977, p.3, line 1), <i>Time and Motion Study I</i> , <i>meno mosso: poco espressivo</i>	53
33. Ferneyhough (1971-1977, p.8, line 5), <i>Time and Motion Study I</i>	54
34. Symbols used for quartertones in eight sources	59
35. Symbols used by Watts (2015)	60
36. Sparnaay (2011, p.39), key notation system.....	61
37. Alder (2013, p.iii), key notation system	62
38. Watts (2015, p.83), key notation system.....	62
39. Rehfeldt (2003, p.34), fingering pattern for G#2	63
40. Richards (1995, p.32), fingering pattern for G#2	63
41. Richards (1995, p.32), fingering pattern for D#3.....	63
42. Richards (1995, p.32), fingering pattern for F#2.....	64
43. Bok's key notation system in <i>New Techniques for the Bass Clarinet</i> (2011, p.4)	65
44. Watts (2015, p.175, p.176, p.183), fingering patterns SW48, SW52, and SW94	67
45. Alder (2013, p.4), two key notation examples showing the difficulty in reading the graphics representing keys 3a and 5a-8a	68
46. Alder (2013, p.iii), 'Guide to the Fingering Chart'	69
47. Bok (2011, p.4), diagram of Selmer Paris (new model)	70
48. Richards (1995, p.33), fingering pattern for A♭4.....	71
49. Bok, fingering pattern for A♭4 (Appendix B)	72

50. A diagram showing the margin of error allowed for the quartertone pitches between each semitone pitch (The 0's represent any two chromatic semitones. The area in red represents the allowed margin of error)	80
51. Fingering patterns for F $\sharp$ 3, G $\flat$ 3, and G3 (Appendix B)	82
52. D2 to D3 notated in quartertones	83
53. A diagram showing the margin of error allowed for the eighth-tone pitches between each semitone pitch (The 0's represent any two chromatic semitones. The areas in blue show the margin of error allowed for each eighth-tone pitch. The area in red represents the original margin of error allowed for quartertone pitches)	86
54. D2 to D3 notated in eighth-tones	87
55. Domínguez, <i>Cuerpo Negro</i> part 1, bar 27, original version	90
56. Domínguez, <i>Cuerpo Negro</i> part 1, bar 27, final version	90
57. Domínguez, <i>Cuerpo Negro</i> part 1, bars 51-55, final version	91
58. Domínguez, <i>Cuerpo Negro</i> part 1, bars 88-90, original version	91
59. Domínguez, <i>Cuerpo Negro</i> part 1, bars 88-90, final version	91
60. Bok, <i>Fluctuations I</i> , bars 5-6	94
61. Bok, <i>ANNalogy</i> , bars 1-4	95
62. Fingering pattern initially used for the C $\sharp$ 3 in <i>ANNalogy</i>	95
63. Fingering pattern now used for the C $\sharp$ 3 in <i>ANNalogy</i>	96
64. Bok, <i>ANNalogy</i> , letter D, bars 5-13	97
65. Bok, <i>E-A-E</i> , bars 1-10	99
66. Bok, <i>smaller change</i> , quartertone and eighth-tone sections	100
67. Fingering pattern for D $\sharp$ 3 used for the Huygens-Fokker concert	104
68. D2 to D3 notated in 31-tone pitches	105
69. The tenor saxophone and bass clarinet parts for <i>Radio Istria</i> , bars 56-59	106
70. The fingering patterns for C $\flat$ 3 and F $\sharp$ 3 (Appendix D)	107
71. Uijlenhoet, <i>Radio Istria</i> , part 2C, bars 40-42	108
72. Laufer, <i>verse & refrain</i> , bars 1-4	110
73. Redgate, new work, bars 36-41	111
74. Bok, <i>Homage</i> , bars 6-8	111
75. Téhéricsen, <i>Progression Bureaucratique</i> , original version, bar 97	113
76. Téhéricsen, <i>Progression Bureaucratique</i> , version 2, bars 92-103	114

77. Téhéricsen, <i>Progression Bureaucratique</i> , bars 1-2.....	114
78. Téhéricsen, <i>Progression Bureaucratique</i> , bars 8-10.....	115
79. Téhéricsen, <i>Progression Bureaucratique</i> , bars 30-31.....	115
80. Téhéricsen, <i>Progression Bureaucratique</i> , bars 119-120, 31-tone reading and semitonal reading	117
81. Laufer, <i>verse & refrain</i> , version 1, bar 15.....	118
82. Laufer, <i>verse & refrain</i> , version 1, bar 43.....	118
83. Laufer, <i>verse & refrain</i> , version 1, bar 2.....	119
84. Laufer, <i>verse & refrain</i> , version 1, bar 60.....	119
85. Laufer, <i>verse & refrain</i> , version 1, bar 6.....	119
86. Laufer, <i>verse & refrain</i> , version 1, bars 9-11.....	120
87. Laufer, <i>verse & refrain</i> , version 2, bars 8-11.....	121
88. Redgate, bars 57-72 from the score for bass clarinet solo with my annotations	124
89. Redgate, bars 30-41 from the score for bass clarinet solo with my annotations	126
90. Fingering pattern sequence for C $\flat$ 4, D $\flat$ 4, and D $\sharp$ 4 (31-tone) in Redgate, bars 39-40	127
91. Fingering patterns for C $\flat$ 3 and C3 in Appendix D	129
92. Fingering patterns for C $\flat$ 3 and C3 in Appendix E	130
93. Bok, <i>Homage</i> , bars 8-9.....	131
94. Bok, <i>Homage</i> , bar 13.....	132
95. Bok, <i>GIANT nano Steps</i> , bars 21-32	133
96. Bok, <i>Microclimate I</i> for two bass clarinets, E bars 1-8	134
97. Bok, <i>smaller change</i> for solo bass clarinet, 31-tone section	135
98. Bok, <i>small change</i> for tenor saxophone and bass clarinet, bars 1-8.....	137
99. Bok, <i>small change</i> for tenor saxophone and bass clarinet, section B (bars 9-16).....	138
100. Watts (2015, p.33), the harmonic series of the bass clarinet.....	142
101. Watts (2015, p.40), the most prominent partials on the bass clarinet's low C [C1, HB]	142
102. Seven root fingering patterns which can be used to sound overtone C5	144
103. Table comparing the results of using four different root fingering patterns to play the overtone D4.....	145
104. Carter, <i>Steep Steps</i> , bars 1-7.....	148
105. Carter, <i>Steep Steps</i> , bars 11-12.....	149

106. Carter, <i>Steep Steps</i> , bars 26-27	150
107. Pitch deviation on D ₄	152
108. Pitch deviation on A _b ₄	152
109. Pitch deviation on F _# ₄	153
110. A root-overtone phrase shifting between single sounds and multisounds	155
111. Mc Laughlin, <i>a point on many lines</i> , blocks 1-4	157
112. Mc Laughlin, <i>a point on many lines</i> , bars 34-37	158
113. Mc Laughlin, <i>a point on many lines</i> , bars 81-82	158
114. Mc Laughlin, <i>a point on many lines</i> , bars 92-104	159
115. Domínguez, <i>Cuerpo Negro</i> , bars 1-21	161
116. Domínguez, <i>Cuerpo Negro</i> , bar 22	162
117. Domínguez, <i>Cuerpo Negro</i> , bar 24	163
118. Domínguez, <i>Cuerpo Negro</i> , bar 27	163
119. Laufer, <i>verse & refrain</i> , bars 16-23	164
120. Laufer, <i>verse & refrain</i> , bars 44-51	165
121. Bok, <i>There is a place for multiphonics</i> , section A	166
122. Bok, <i>There is a place for multiphonics</i> , section B	167
123. Bok, <i>There is a place for multiphonics</i> , penultimate bar	167
124. Bok, <i>Microclimate I</i> , section C	168
125. Bok, <i>Microclimate I</i> , end of section E	169
126. Bok, <i>smaller change for solo bass clarinet</i> , root-overtone section	170

List of video

page

1. The ambitus of the bass clarinet	7
2. Basics of the root-overtone system.....	11
3. Technical aspects of going ‘over the break’	12
4. The (im)possibilities of the bass clarinet’s lowest fifth.....	12
5. Lower lip positions	14
6. Forms of embouchure manipulation	18
7. Different forms of articulation	31
8. Interview with Emma Kovárnová part 1 (November 21, 2016)	48
9. Interview with Emma Kovárnová part 2 (November 21, 2016)	48
10. Quartertone scale (Appendix B)	84
11. Eighth-tone scale (Appendix C)	88
12. Summary of the core elements of quartertone and eighth-tone playing	101
13. 31-tone scale version 1 (Appendix D)	104
14. 31-tone scale version 2 (Appendix E)	109
15. 31-tone scale definitive version (Appendix F)	109
16. Summary of the core elements of 31-tone playing.....	140
17. Summary of the core elements of root-overtone playing	171

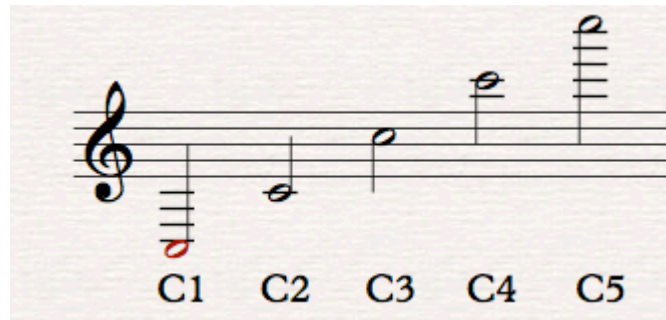
List of audio

page

1. Domínguez, <i>Cuerpo Negro</i> part 1, bars 88-90, final version	91
2. Bok, <i>Fluctuations I</i> , bars 5-6, original version	94
3. Bok, <i>Fluctuations I</i> , bars 5-6, final version	94
4. Bok, <i>ANNalogy</i> , bars 1-4, old version	96
5. Bok, <i>ANNalogy</i> , bars 1-4, new version	96
6. Bok, <i>ANNalogy</i> , letter D, bars 5-13	97
7. Bok, <i>E-A-E</i> , bars 1-10	99
8. Bok, <i>smaller change</i> , quartertone and eighth-tone sections	100
9. Uijlenhoet, <i>Radio Istria</i> , part 2C, bars 40-42	108
10. Téhéricsen, <i>Progression Bureaucratique</i> , bars 30-31	116
11. Bok, <i>Homage</i> , bars 8-9	131
12. Bok, <i>Homage</i> , bar 13	132
13. Bok, <i>GIANT nano Steps</i> , recording of bars 21-32	133
14. Bok, <i>smaller change</i> for solo bass clarinet, recording of 31-tone section	135
15. Bok, <i>small change</i> for tenor saxophone and bass clarinet, recording of section B (bars 9-16)	139
16. Seven root fingering patterns which can be used to sound overtone C5	144
17. Recording of the root-overtone phrase in Figure 110	155
18. Mc Laughlin, <i>a point on many lines</i> , blocks 1-4	157
19. Mc Laughlin, <i>a point on many lines</i> , bars 34-37	158
20. Mc Laughlin, <i>a point on many lines</i> , bars 81-82	158
21. Mc Laughlin, <i>a point on many lines</i> , bars 92-104	160
22. Domínguez, <i>Cuerpo Negro</i> , bars 1-21	162
23. Domínguez, <i>Cuerpo Negro</i> , bar 22	162
24. Domínguez, <i>Cuerpo Negro</i> , bar 24	163
25. Domínguez, <i>Cuerpo Negro</i> , bar 27	163
26. Laufer, <i>verse & refrain</i> , bars 16-23	164
27. Laufer, <i>verse & refrain</i> , bars 44-51	165
28. Bok, <i>There is a place for multiphonics</i> , section A	166
29. Bok, <i>There is a place for multiphonics</i> , section B	167
30. Bok, <i>There is a place for multiphonics</i> , penultimate bar	168
31. Bok, <i>smaller change</i> , root-overtone section	170
32. Bok, <i>Multi-Micro I</i>	174
33. Bok, <i>Fifty shades of Dee</i>	174

Nomenclature of the octaves

In order to clearly denominate the different octaves of the bass clarinet, the following nomenclature will be used in this study. Using French notation, transposed in B $\flat$, and sounding a 9th lower than notated, the lowest note of the instrument is labelled C1. Each subsequent octave is then given a higher number.

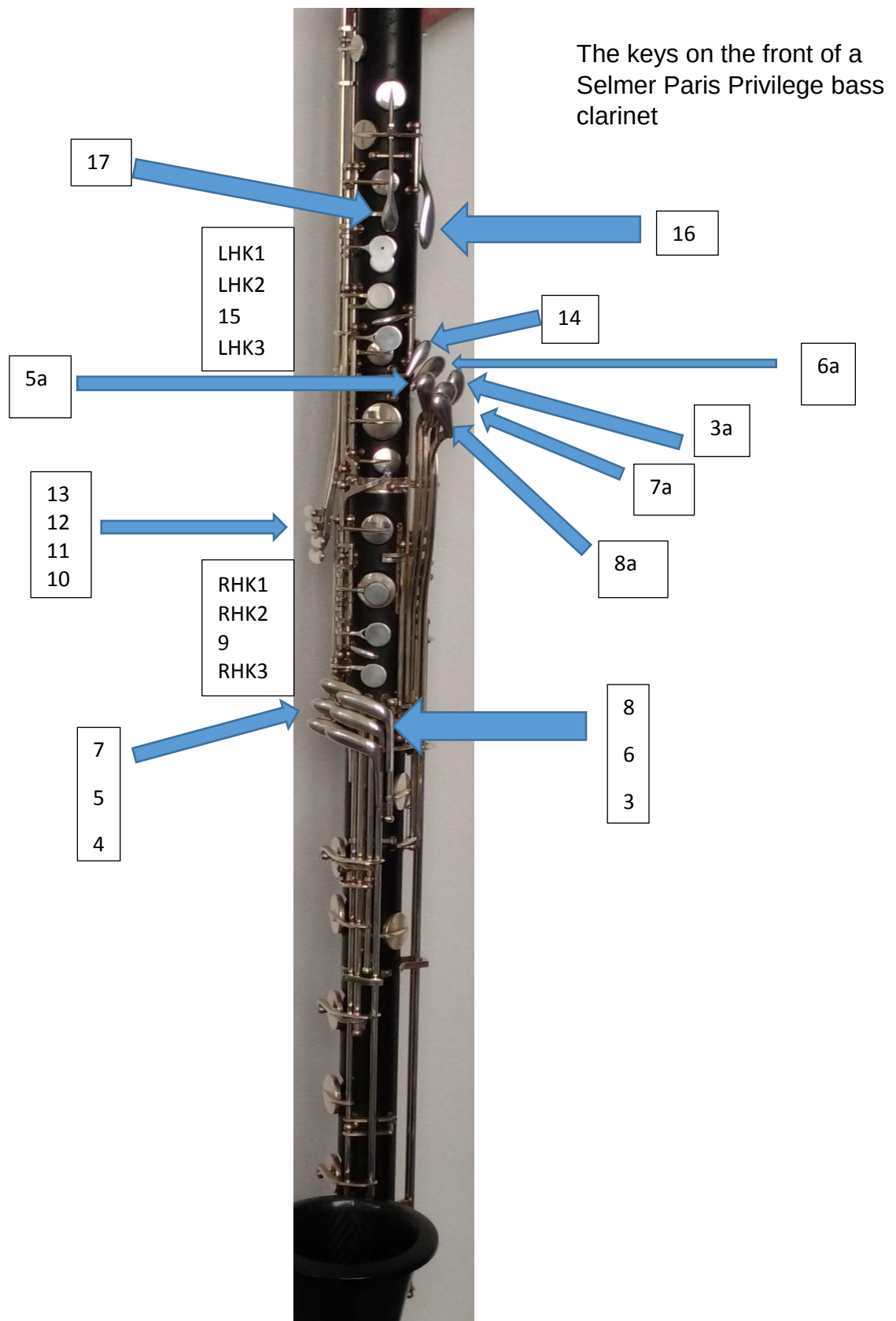


Henri Bok notation	C1	C2	C3	C4	C5
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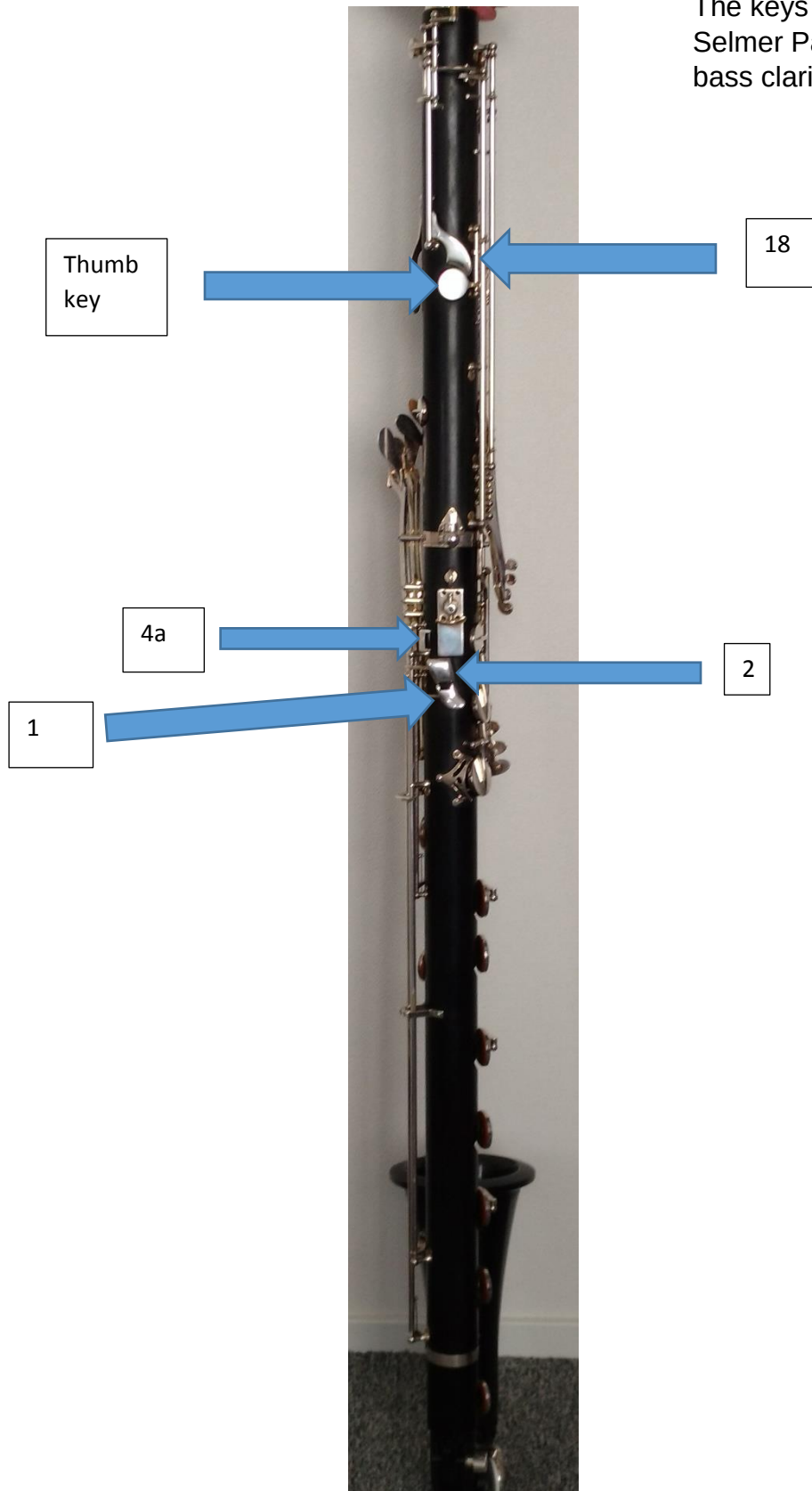
The octave designation and the corresponding pitch in C (concert pitch) is as follows:

Scientific Pitch Notation	B $\flat$ 1	B $\flat$ 2	B $\flat$ 3	B $\flat$ 4	B $\flat$ 5
Helmholtz Notation	B $\flat$ '	B $\flat$	b $\flat$	b $\flat$ '	b $\flat$ ''

Key nomenclature system



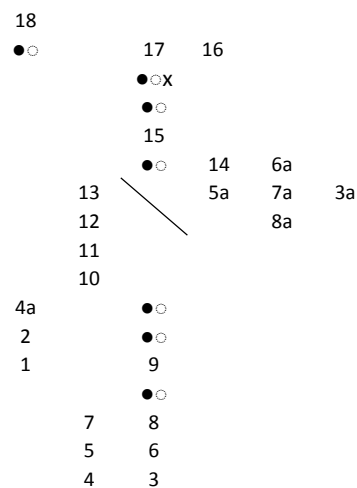
The keys on the back of a
Selmer Paris Privilege
bass clarinet



Key numbers and corresponding pitches for the lowest fifth to aid with the translation of fingering patterns to other bass clarinet models.

Key	Pitch
8	G $\sharp$ 1/A $\flat$ 1
7	F $\sharp$ 1/G $\flat$ 1
6	F1
5	E1
4	D $\sharp$ 1/E $\flat$ 1
3	D1
2	C $\sharp$ 1/D $\flat$ 1
1	C1

For the purpose of this research the key nomenclature system will be translated to a simple diagram in the fingering pattern charts:



The circles for LHK2, LHK3, RHK1, RHK2, RHK3, and the thumb key represent open (○) and closed (●) keys. In addition to these symbols, LHK1 also has a symbol to represent half open (x).

Glossary

31 tET see **microtonal divisions**.

altissimo the uppermost register on woodwind instruments.

ambitus the range or the distance between the lowest and highest note of an instrument.

barrel or socket is located between the mouthpiece and upper joint of the soprano clarinet and has a straight form. It is used to fine-tune the instrument. On the bass clarinet it has a curved shape and is called the neck.

bell located at the bottom of the (bass) clarinet, under the lower joint. It reinforces the sound of the lowest notes and facilitates the production of overtones. That is why the material used for the bell (metal, wood, or carbon-fibre) matters.

bisbigliando is a tremolo, often referred to as a timbral colour trill. On the bass clarinet **bisbigliando** is a tremolo between two or more harmonics of approximately the same pitch, using different root fingering patterns.

(the) break the passage from B $\flat$ 2 to B2 on the (bass) clarinet which marks the exact transition from the root area of the instrument to the overtone area. To make this a smooth transition lower lip adjustment is needed, otherwise there will be a dip in the sound, the sound will 'break'.

eighth-tone see **microtonal divisions**.

embouchure the shaping and position of the lips in the playing of wind instruments.

false fingerings term used to refer to alternative fingering patterns in jazz music, frequently involving pitch change.

fundamental the lowest in a whole series of pitches, called the *harmonic series*. The fundamental is counted as the first harmonic, upon which several overtones can be produced. On the bass clarinet the area of fundamentals (roots) comprises the lowest octave plus the next minor seventh (C1-B $\flat$ 2).

glissando a glide from one pitch to another.

harmonic an integer (whole number) multiple of the fundamental frequency of a vibrating object. In acoustics the basic vibration is the 'first harmonic'.

harmonic series the whole series of pitches comprising a fundamental and its natural overtones.

keyword the complete set of keys, mounted on the instrument.

microtonal divisions

quartertone a microtone which is half a semitone. There are therefore two quartertones to each semitone, and four quarter tones to each whole tone. A quartertone equals 50 cents.

31 tET 31-tone equal temperament is the tempered scale derived by dividing the octave into 31 equal-sized steps (equal frequency ratios). A 31-tone equals 38.7 cents.

eighth-tone microtonal interval $1/8^{\text{th}}$ the size of a whole-tone, measuring 25 cents.

microtone any interval smaller than a semitone.

monophonic producing one note at a time.

multiphonic extended technique on a monophonic musical instrument whereby several notes are produced at once.

type 1 multiphonic produced by embouchure manipulation of a given fundamental whereby upper partials are sounded on top of the root. The simultaneous production of elements belonging to the harmonic series of the chosen fundamental, by using standard fingerings and embouchure manipulation.

type 2 multiphonic produced by using special (unorthodox, alternative, bastardized) fingering patterns.

multiple sound/multisound see multiphonic.

nano tones the term I have used in this study to refer to microtonal intervals of less than an eighth-tone.

neck is located between the mouthpiece and upper joint of the bass clarinet. It is curved in shape and has the same function as the barrel on the soprano clarinet (to fine-tune the instrument).

overblow using a root fingering pattern (fundamental) with an overtone lower lip position (position 2, 3, or 4) so that an upper partial from the natural harmonic series is generated.

overtone term used to refer to any resonant frequency above the fundamental frequency. It is important to note that the term 'overtone' does not include the fundamental frequency. The first overtone is therefore already the second harmonic or second partial.

partial (tone) see **harmonic**.

quartertone see **microtonal divisions**.

root is the fundamental frequency of a vibrating object. It is the first harmonic of a harmonic series. See also **fundamental**.

smorzando is obtained by small movements of the lower lip on the reed, similar to the jaw movements (not diaphragm) used in normal vibrato.

standard fingering patterns fingering patterns in general use for semitonal pitches.

split sound also called 'son fendu', a multiphonic sound comprised of only two pitches.

underblow playing an overtone with such a relaxed embouchure that it generates an isolated or simultaneous undertone.