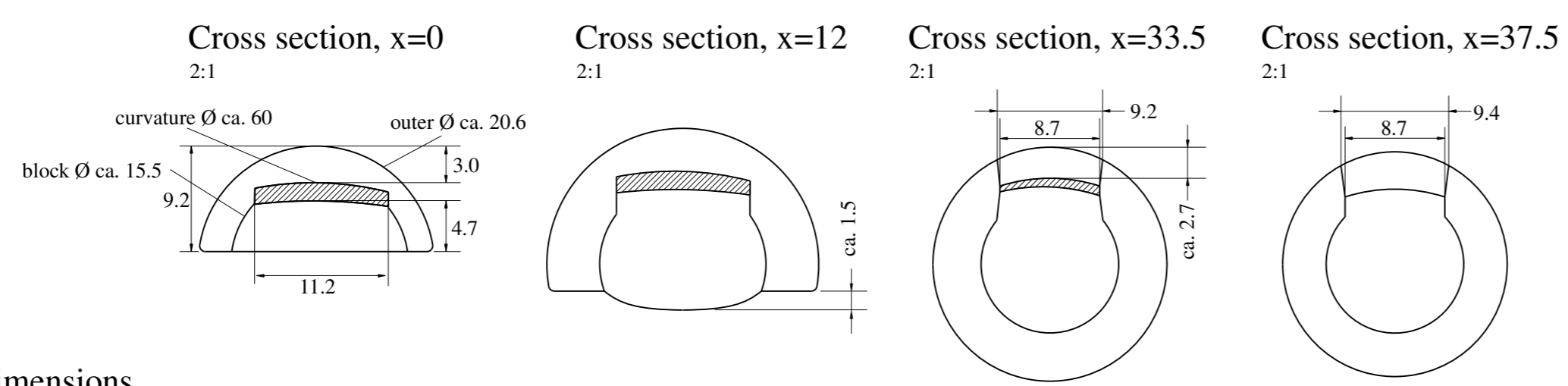
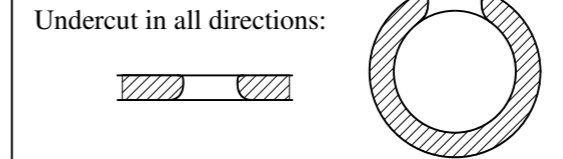


Finger holes

Finger hole No.	Distance from top of instrument to center of hole	Ø side/side	Ø up/down	Remarks
0	119	4.6	5.4	= thumb hole
1	130	5.0	5.4	
2	152	5.2	5.3	
3	172	5.3	5.3	
4	190.5	5.3	5.6	
5	209	5.3	5.7	
6	230	5.4	5.8	
7	249	4.5	4.7	aligned with other holes

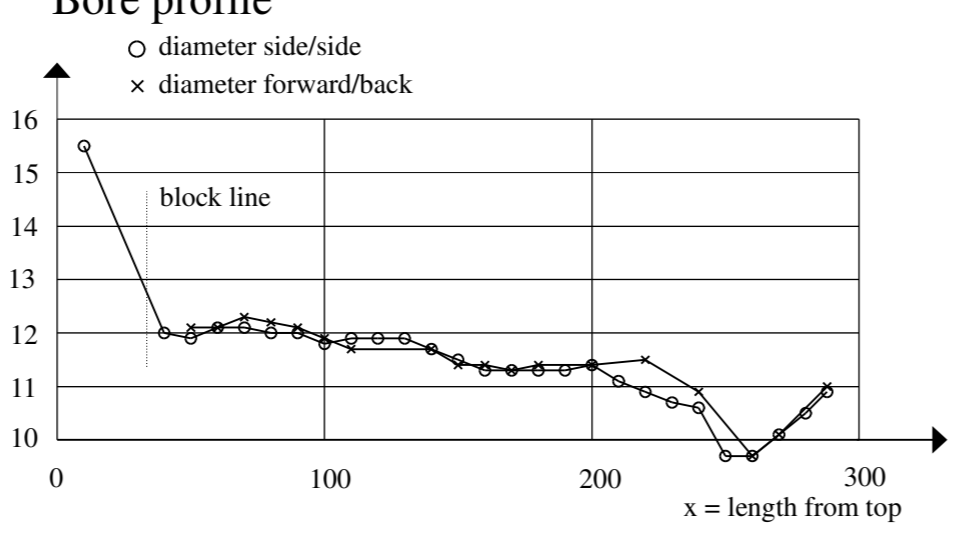
Holes not very regularly made:
Rather edged shape
Many small edges at the outer surface broken off during the manufacture



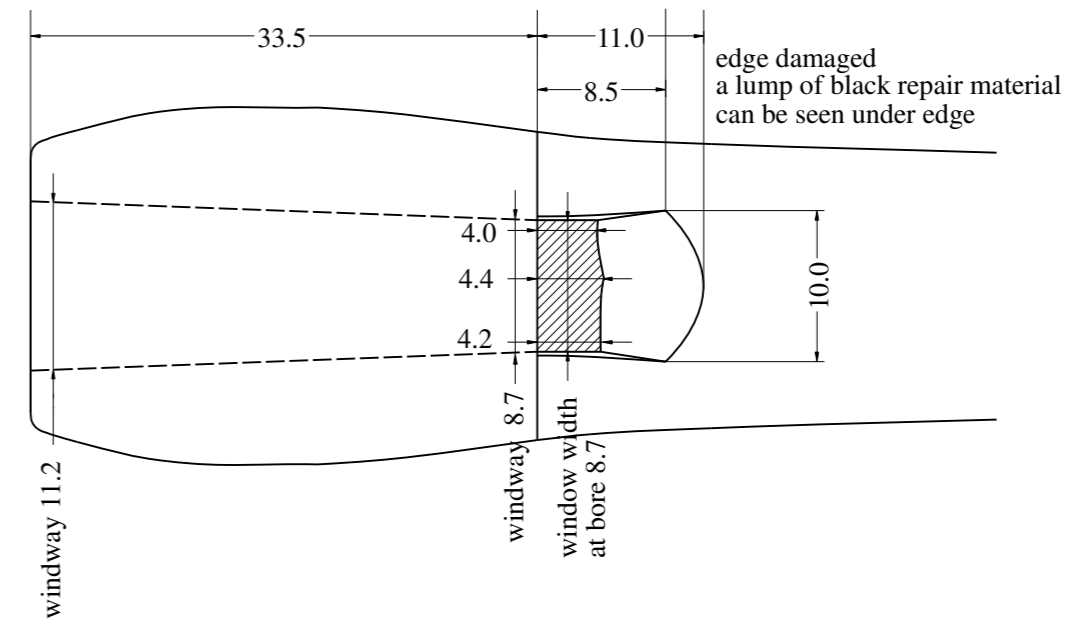
Bore dimensions

x = distance from top of recorder	Ø side/side, direction of y-axis	Ø front/back, direction of z-axis
40	12.0	12.1
50	11.9	12.1
60	12.1	12.1
70	12.1	12.3
80	12.0	12.2
90	12.0	12.1
100	11.8	11.9
110	11.9	11.7
120	11.9	-
130	11.9	-
140	11.7	11.7
150	11.5	11.4
160	11.3	11.4
170	11.3	11.3
180	11.3	11.4
190	11.3	-
200	11.4	11.4
210	11.1	-
220	10.9	11.5
230	10.7	-
240	10.6	10.9
250	9.7	-
260	9.7	9.7
270	10.1	10.1
280	10.5	10.6
288	10.9	11.0

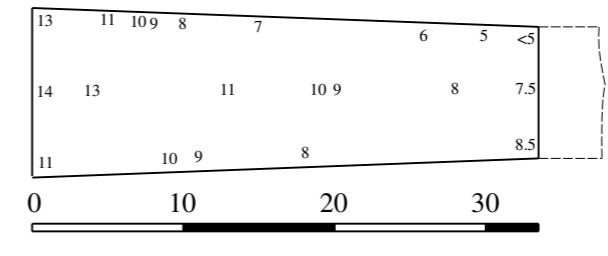
Bore profile



Front view of windway and ramp 2:1



Windway height
measuring point approximately in center of number in 1/10 millimetres (1.2 mm gauge was defect and could not be used)



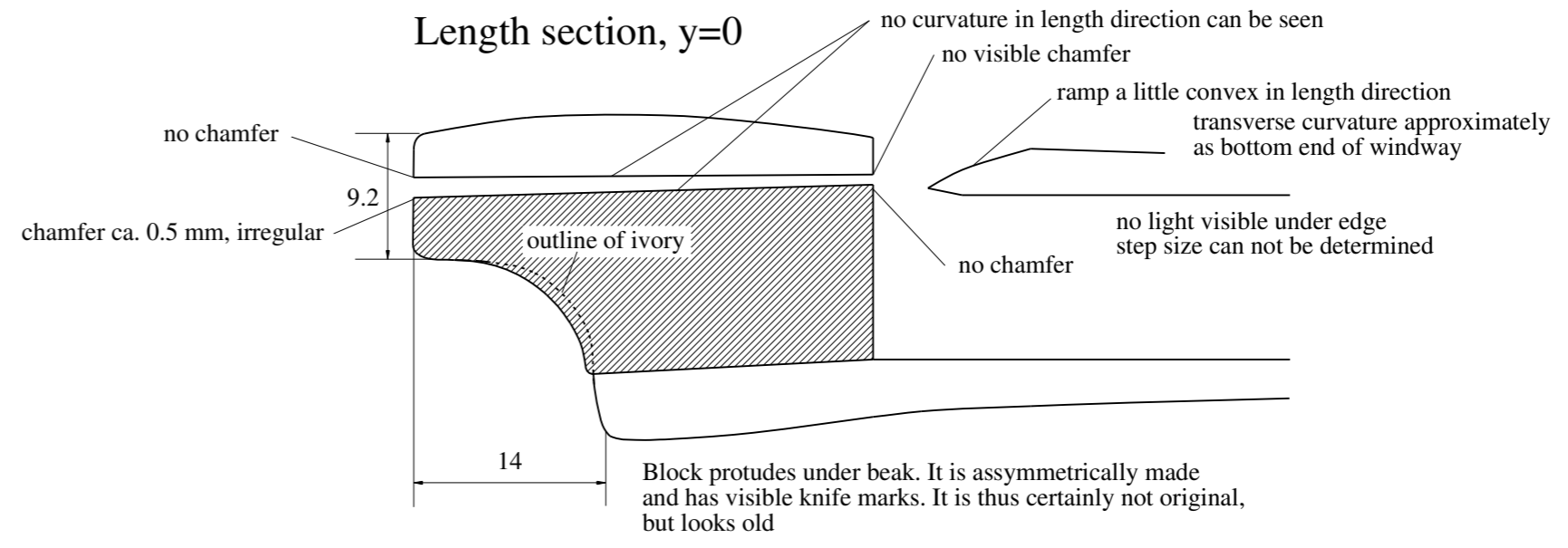
Tuning

The recorder is regarded as an instrument in c". The pitch is somewhat higher than a major second above a'=440 Hz

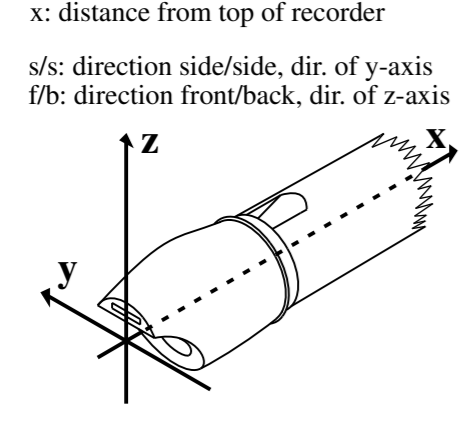
Tone	Wind pressure mm	Fingering	Cents deviation from a'=440 Hz + a major second (add 200 cents to the figures in the table)	Remarks
c"	12		+45	
d"	20		+60	
e"	20		+15	
f"	25	01234 6	+50	
f#"	25	0123 56	+75	
f#"	25	0123 567	+55	
g"	30		+15	
g#"	30	012 456	+15	
a"	32		-25	
bb"	32	01 34	+15	
bb"	32	01 3	+40	
b"	34		-40	
c#"	36	0 2	+70	
c#"	36		+20	
c#"	36	12	+40	
d"	38	2	+50	
eb"	38	23456	+5	
e"	42		-10	
f"	42	Ø1234 6	+10	
f"	42	Ø1234 7	+35	
g"	52		+20	
g#"	52	Ø12 4	+25	
a#"	68		0	
bb#"	88	Ø12 456	-30	
bb#"	80	Ø12 56	-30	
b#"	100	Ø12 45	+10	
c#"	100	Ø1 45	-30	
d#"				does not speak, probably due to bad condition of windway and edge

a", b" and partially c" are very much too flat - can only be played in tune with excessive pressure, using alternative fingerings for the neighbouring notes c": 0 23 56 and d": 23 56
The average deviation of the main notes in the above measurements is ca. 20 cents, which makes the average tuning of the instrument 220 cents higher than 440 Hz, i.e. 499.6 Hz

Length section, y=0



Abbreviations



Soprano recorder

Dean Castle, Kilmarnock, Ayrshire, Scotland, Inv. No. 75

Material: Ivory	Pitch: Regarded as in c" at a' = ca. 500 Hz
The recorder is generally in good condition apart from two small cracks from the window 3-5 mm upwards and from the damaged edge. The block is more roughly made, making the windway irregular, and it is probably not original. The recorder is most likely made 1650-1675. It has no maker's mark.	
All measurements in mm	
Measured by Ture Bergström, June 1998, with help from Marianne Mezger and Gundula Bergström	
Drawn December 1998 by Ture Bergström	
© Ture Bergström 1998	
Available versions of this drawing: 1. Technical drawing 1:1 on paper 2. File in Malz++Kassner CAD format either on diskette or as e-mail	The drawing can be ordered from: Ture Bergström Havevej 49, DK-4700 Næstved, Denmark Tel. (+45) 55 77 43 00 ture@bergstrom.dk www.bergstrom.dk