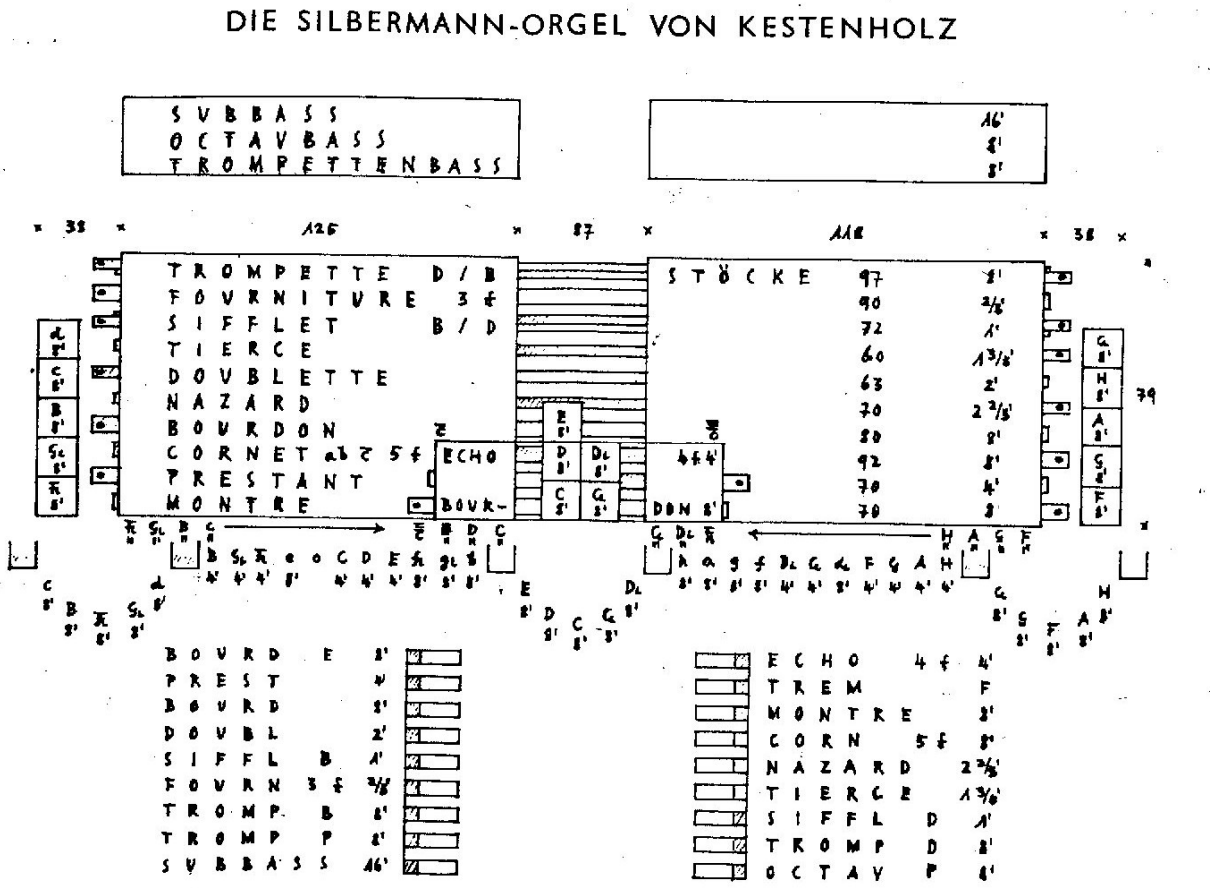

Johann Andreas Silbermann (1712-1783),

(nephew of the legendary Gottfried Silbermann)

St. Peter and Paul Church

Kestenholz, Alsace, France

By Blair Batty

Forward

I am a retired organbuilder. I've always had an interest in pipe organ scaling and voicing. Scaling are the measurements of the pipes, that give them the particular sound of a particular organ. Over the years, I have collected and studied the scales of dozens of organs. As it was for my personal use, and I am not an academic, I often failed to note where I got the measurements from.

As this data may be useful to others, I decided to share it. You must use it with caution, as some of it was written down years ago. I may no longer know the source, or how reliable it may be.

Bear in mind when studying the scales, this organ is pitched at approximately A=392 Hz *(a whole tone below modern concert pitch of A=440 Hz)*, characteristic of its time.

If you are new to scaling, I recommend: http://www.blairbatty.ca/tonal.html#scales

Do contact me, if you have any comments, corrections, sources or questions. I won't be offended.

Version: July 5, 2026

BlairBatty@Gmail.com

BlairBatty.ca

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Kestenholz Organ

This organ was built by Johann Andreas Silbermann (1712-1783), nephew of the legendary Gottfried Silbermann, for the Protestant church of St. Peter and Paul in Kestenholz (now known as Kœstlach in French, in the Alsace region).

Andreas' son Johann Andreas Silbermann (1712–1783) inherited the Strasbourg workshop and continued his father's Alsatian style but was also influenced by his uncle Gottfried's Saxony German accent. He worked primarily in Alsace (now France). He was known for his meticulous craftsmanship, elegant cases, and a sound that blends French elegance with German solidity. Johann Andreas adapted German scaling for his principals, while continuing French scales for Flutes and Mutations.

The case is also a magnificent example of early 18th-century woodwork, elegant but less ornate than some of his later instruments.

Mystery

Forty-five years ago, I received these two pages of scales, plus the diagram of this organ, out of a now unknown book of Gottfried Silberman material. I misidentified it as a Gottfried Silbermann organ and drew my graphs of scales, mislabeled as Gottfried. However, the manuscript is clearly titled “Kestenholz Joh And Silbermannorgel”.

An unknown source identified it as built in 1718, which would mean the organ was built by a 6 year old JA Silbermann! I hope someone can verify the organ, builder and year built. But the scale numbers and charts are useful, So I include them.

Stoplist

Hauptwerk (C–c3)

8’	Montre	
8’	Bourdon	
4’	Prestant	
2 2/3’	Nazard	
2’	Doublette	
1 3/5’	Tierce	
1’	Sifflet	Bass
1’	Sifflet	Diskant
III	Fourniture	
V	Cornet	c1-c3
8’	Trompette	Bass
8’	Trompette de recit	Diskant
	POS-HW	

Echo *(c1–c3, upper manual)*

8’	Bourdon
IV	Cornet

Pedal (C–d1)

16’	Subbass
8’	Octavbass
8’	Trompettenbass
	Tremulant: Fort

Description of Measurements

If you are not familiar with scaling measurements, I recommend you checkout my book of Scaling. It is available for free download from my website http://www.blairbatty.ca/tonal.html#scales. I typically measure every "c" and "f#" pipe, to understand how the dimensions of the pipes change, throughout the compass, from bass to treble.

Diameter: This is the inside diameter of the pipe, measured in millimeters.

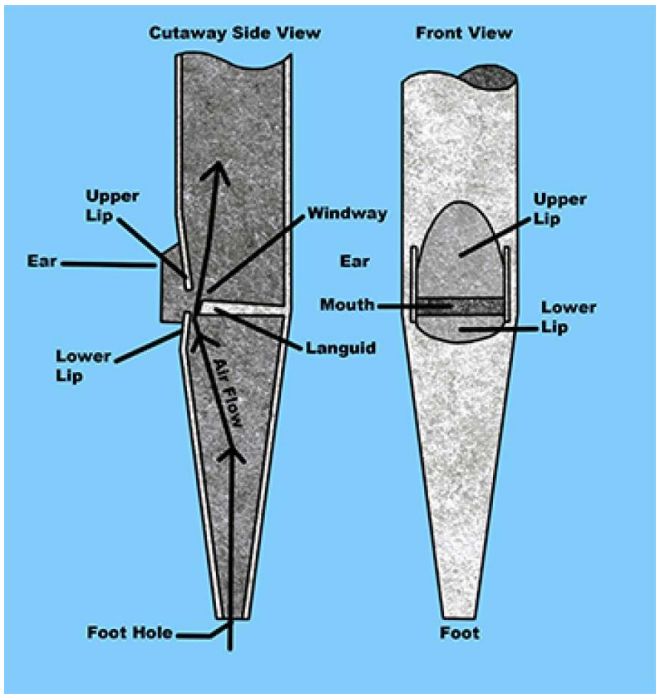
Mouthwidth: width of the mouth in millimeters.

Cutup: is distance between the upper and lower lips, in millimeters.

Windway: is the width of the slit of the windway, in millimeters.

Toehole: Is the diameter of the wind hole in the bottom of the foot, in millimeters.

Foot WP: Is the windpressure inside the foot of the pipe, measured in Pascal. Ten Pascal = ~1 millimeter watercolumn.



Calculations

Not everything was measured. Some of the numbers written down here were calculated from the measurements.

Topfer NM: The diameter, mouthwidth and cutup measurements were converted to Topfer Normmeasure and graphed. Mouth NM presumes ¼ mouth as normal, cutup presumes ¼ cutup as normal.

Mouthwidth and cutups: are commonly described as fractions *(e.g. ¼ mouthwidth, ¼ cutup)*. So, these fractions were also calculated.

What do the Numbers Tell Us?

Some people, like I, enjoy measuring the various dimensions of the pipes in an organ, and generating various charts and graphs of that data. We do that to discover how the original designer and voicer scaled and manipulated the pipes, to arrive at the sound they wanted.

In very simplistic terms, scaling and voicing can be described in this way:

- Diameter determines the loudness of the fundamental of the pipe.
- Cutup fine-tunes the harmonic content.
- Toehole/mouthwidth/windway fine-tunes the loudness.

Of course, it's not that simple. For example, you can increase the scale of the pipe, which would increase the loudness of the fundamental *(and will also make the tone brighter)*. Then by reducing the toehole size which reduces the wind and loudness, and by using a lower cutup to reduce the brightness you can approximate the original pipes sound. But it is not identical, change has consequence.

KESTENHOLZ JOH AND SILBERMANNORGEL

GRAND ORGUE C-c''' Untermanual

1. Montre	8'	d'	ø	52,5	L	39,1	A	11,5	Zinn				
		c''		33,9		25,2		8,4					
		c'''		20,8		15,1		4,7					

C-h Prospekt Zink, ab c' auf der Lade, c'/cs' noch Zink.

2. Prestant	4'	d	ø	53,0	L	38,3		10,9	Zinn				
		c'		34,5		25,8		7,6					
		c''		21,0		15,5		5,0					
		h''		13,9		10,5		2,8					

C-H Prospekt Zink, ab c-auf-der-Lade, c/cs noch Zink.

3. Cornet	8'	5fach, hochgeführt											
Bourdon	8'	c'	ø	43,0	L	32,6	A	14,5	RL	90,6	ø	10,8	
		c''	c''	26,4		22,7		8,9		70,0		8,5	
		c'''		19,0		14,4		4,7		58,5		7,4	
Körperlänge c' 322 c'' 152 c''' 65 Metall, Rohrflöte, keine Hüte, zugelötet, signiert „Cornet".													
Prestant	4'	c'	ø	37,3	L	24,6	A	13,0	Metall				
		c''		24,2		16,8		5,5					
		c'''		16,5		11,6		3,4					
Nazard	2 2/3'	c'	ø	28,5	L	19,3	A	6,4	Metall				
		c''		18,7		12,9		4,3					
		c'''		13,0		8,5		2,8					
Doublette	2'	c'	ø	23,8	L	16,5	A	5,5	Metall				
		c''		16,5		11,5		3,2					
		c'''		11,0		7,4		2,5					
Tierce	1 3/5'	nicht erhalten											

4. Bourdon	8'	C	S	118,0	:	83,0	A	35,0	E-N Holz, Gedackt				
		c		74,0	:	47,0		25,0					
		d		67,0	:	40,0		25,0					
		ds	ø	69,5	L	53,5	A	20,5	RL	110,0	ø	12,9	
		c'		50,0		38,5		15,8		81,0		11,0	
		c''		32,2		23,7		8,7		69,5		8,9	
		c'''		23,3		17,9		5,0		51,0		7,2	

15 Holzpfeifen, Decke Eiche, Eichenvorschläge genagelt, Pergamentstreifen am oberen Rand, Stöpsel ohne Griff oder Schlinge. Rohrflöten Metall, zugelötet.

5. Nazard	2 2/3'	C	ø	79,0	L	51,0	A	14,8	Metall, zyl offen	
		c		48,5		32,4		8,8		
		c'		31,0		20,5		5,6		
		c''		20,4		13,6		4,3		
		c'''		13,5		8,7		2,7		
6. Doublette	2'	C	ø	56,0	L	43,0	A	11,5	Zinn	
		c		34,5		25,4		7,9		
		c'		21,3		15,7		4,7		
		c''		14,1		11,0		3,0		
		c'''		10,0		7,6		2,2		

Auf dem Stock der Doublette 2' steht zur Zeit Gamba 8'.

7. Tierce	1 3/5'	nicht erhalten, zur Zeit Flöte 4'.
8. Sifflet	1'	Baß nicht erhalten, zur Zeit hier Doublette 2'.
9. Sifflet	1'	Diskant nicht erhalten.

10. Fourniture	3fach 2/3'												
	C	ø	20,8	L	17,4	A	6,3	2/3'	„C" Zinn				
			17,2		14,0		4,7	1/2'					
			13,4		11,4		3,4	1/3'					
	c	ø	20,8	L	17,2	A	5,9	1 1/3'	„c"				
			17,0		14,4		4,8	1'					
			13,3		11,4		4,0	2/3'					

		c'	⌀	16,7	L	14,4	A	4,3	2'	„c''''
				13,2		11,0		3,7	1 1/3'	
				11,4		9,4		3,2	1'	
		c''	⌀	13,3	L	10,4	A	3,6	2 2/3'	„c''''
				11,4		9,1		3,2	2'	
				9,3		7,8		2,4	1 1/3'	
		c'''	⌀	9,8	L	8,6	A	2,2	2 2/3'	„c''''
				8,8		6,9		2,2	2'	
				8,0		6,5		2,0	1 1/3'	
11. Trompette	8'	C	Lg	1800	⌀ o	88,0	⌀ u	20,0	Baß Zinn	
		c		1120		78,0		15,3		
12. Trompette	8'	c'		540		63,0		15,8	Diskant Zinn	
		c''		265		60,0		11,5		
		c'''		115		45,0		13,0		

ECHO c'-c''' Obermanual

1. Bourdon	8'	c'	⌀	43,3	L	32,6	A	15,0	RL 93,5	⌀ 10,5
		c''		28,0		21,7		9,0	70,0	9,0
		c'''		18,8		14,5		5,0	53,0	7,2

Körperlänge c' 320 c'' 152 c''' 65, Metall, Rohrflöte zugelötet, sign. „E".

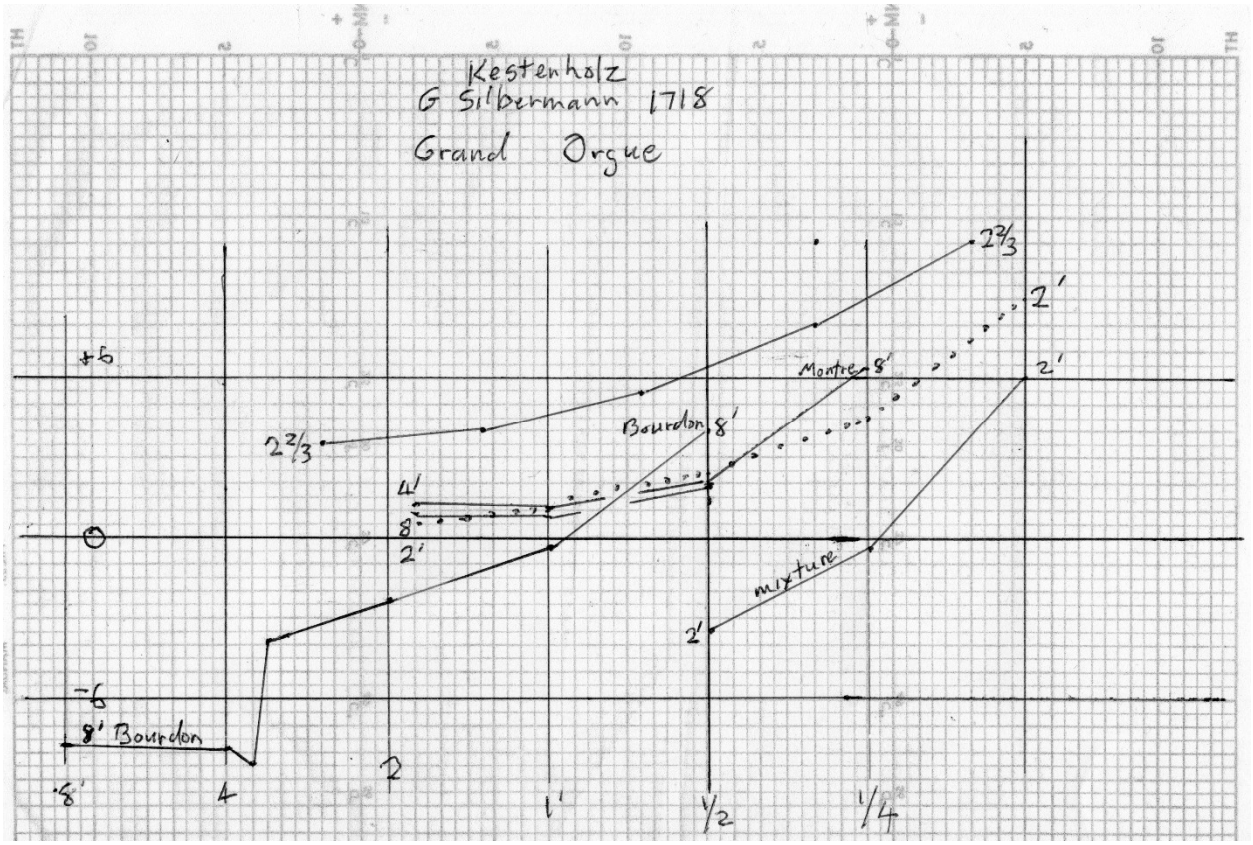
Cornet d' echo	4'	4fach							
Prestant	4'	c'	⌀	32,0	L	22,5	A	6,6	Metall
		c''		24,9		17,0		5,6	
		c'''		17,1		10,4		4,0	
Nazard	2 2/3'	c'	⌀	24,9	L	17,3	A	5,6	Metall
		c''		16,8		10,5		6,8	
		c'''		12,3		7,4		2,8	
Doublette	2'	c'	⌀	20,9	L	13,8	A	4,9	Metall
		c''		13,9		10,0		2,8	
		c'''		11,0		7,3		2,0	

Der Cornet ist heute auf den ganzen Klavierumfang C-f''' eines späteren Schwellwerkes hinter der Orgel verteilt. Die Terzpfeifen sind für die Ergänzungen cs'''-f''' verwendet.

PEDAL C-c

1. Subbaß	16'	C	S	193,0	:	154,0	A	71,0	N Holz, Gedackt
		c		122,0	:	76,0		40,0	
2. Octavbaß	8'	C	S	158,0	:	122,0	A	44,0	
		c		107,0	:	72,0		28,0	

Trompettenbaß 8' nicht erhalten, Einzelteile in der Mantromp.
Tremblant fort

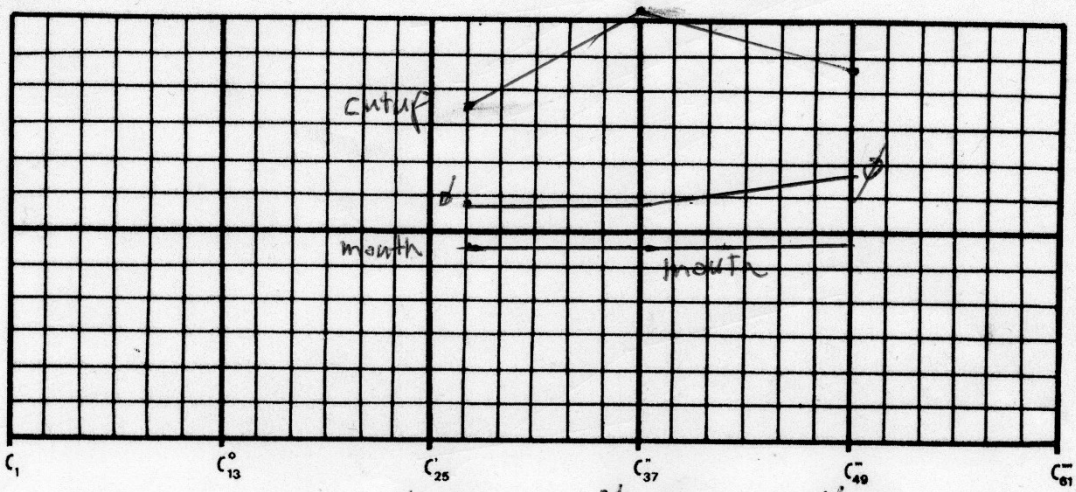

Kestenholz
G Silbermann 1718
Grand Orgue
+6
0
-6
2 2/3
4'
8'
2'
Bourdon 8'
Montre 8'
2'
2 2/3
2'
mixture
8' Bourdon
8'
4
2
1'
1/2
1/4

A. B. Batty

Stop: Mantre 8' Div.: Grand Orgue Builder: G Silberman Date: 1718

Windpressure: Pitch: Church: Kesten holz

Description of site & organ:



Mouthwidth:				1/4·2		1/4·2		1/4·3				
Cutup:				1/3·4		1/3		1/3·2				

ACTUAL MEASURE C' F# C f# d1 f#1 c'' f#'' c''' f#''' c''''

∅				52·5		33·9		20·8				
mouth				39·1		25·2		15·1				
cutup				11·5		8·4		4·7				

façade

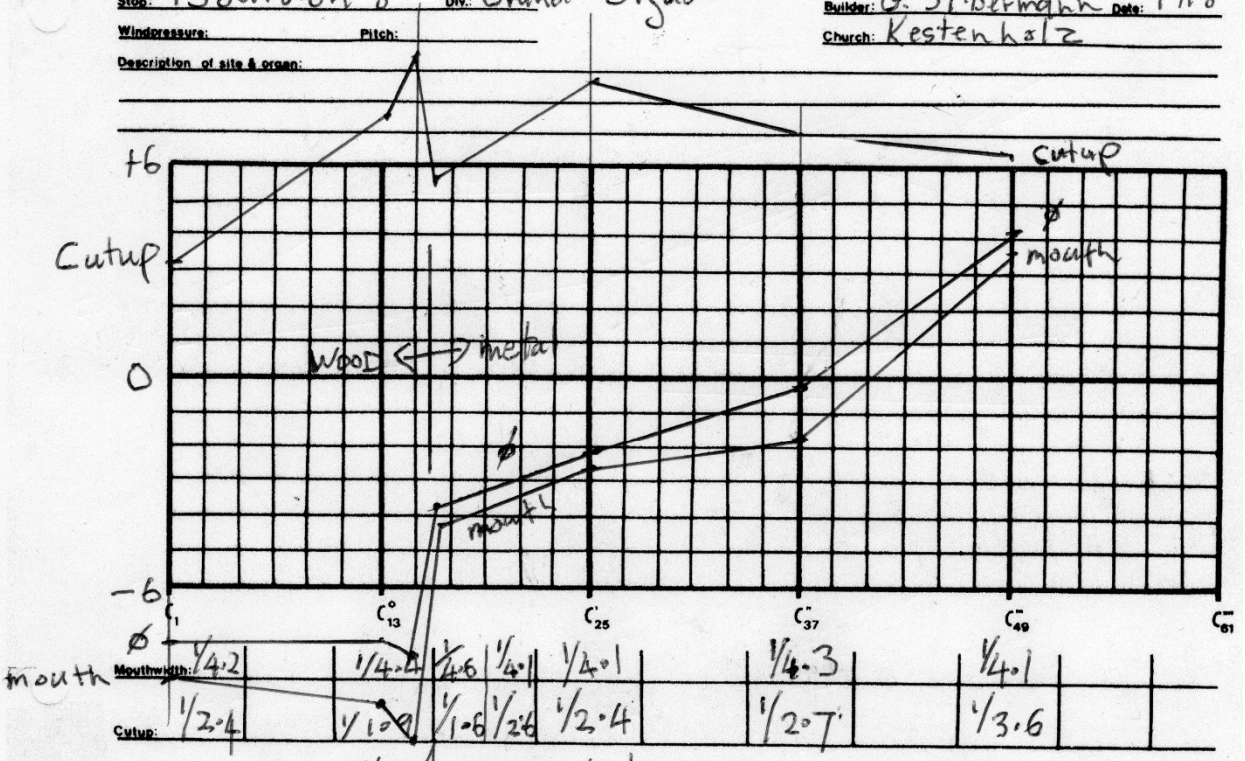
Collector Material:

A. B. Batty

Stop: Bourdon 8 Div.: Grand Orgue Builder: G. S. Silbermann Date: 1718

Windpressure: Pitch: Church: Kestenholz

Description of site & organ:



Mouthwidth:	1/4.2		1/4.4	1/4.6	1/4.1	1/4.1		1/4.3		1/4.1		
Cutup:	1/2.4		1/1.9	1/1.6	1/2.6	1/2.4		1/2.7		1/3.6		

ACTUAL MEASURE

			C'	F#	C	d	d#	c'	f#'	c''	f#''	c'''	f#'''	c''''
theo ø	111.7				66.5	58.4	69	50		32.2		23.3		
depth	118				74	67	~~53.5~~			~~29~~		~~17.9~~		
width	83				47	40	~~53.5~~	38.5		23.7		17.9		
cutup	35				25	25	20.5	15.8		8.7		5		
		chimney length				110		81		69.5		51		
		chimney ø				12.9		11		8.9		7.2		

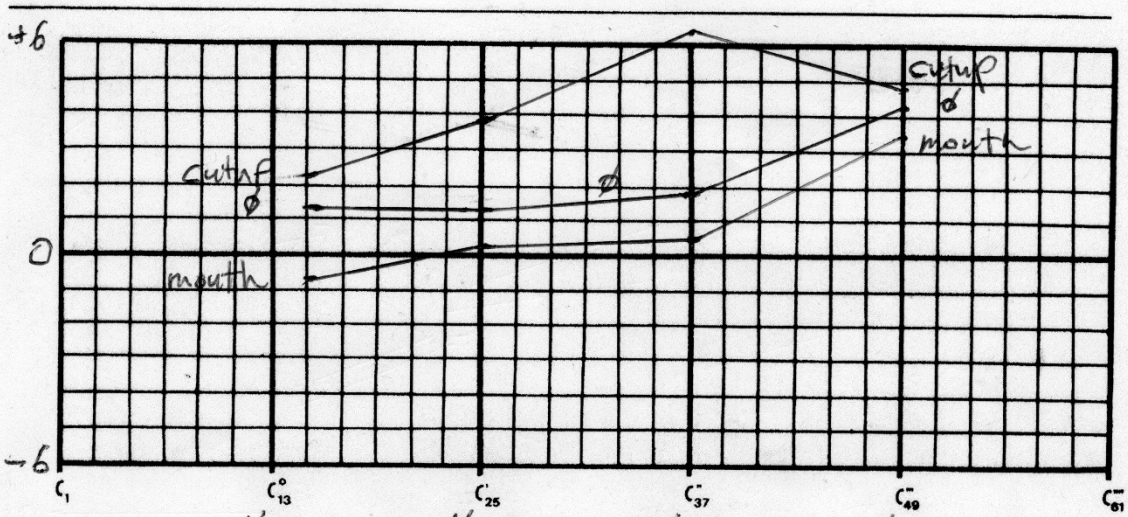
Collector Material:

A. B. Batty

Stop: Prestant 4' Div.: Grand Orgue Builder: G Silbermann Date: 1718

Windpressure: Pitch: Church: Kestenholz

Description of site & organ:



Mouthwidth:			1/4·3			1/4·2			1/4·3			1/4·2
Cutup:			1/3·5			1/3·4			1/3·1			1/3·8

ACTUAL MEASURE

	C	F#	G	f'	c1	f#'	c''	f#''	b'''	f#'''	c''''
ø			53		34.5		21		13.9		
mouth			38.3		25.8		15.5		10.5		
cutup			10.9		~~15.5~~ 7.6		5		2.8		

façade

Collector Material:

A. B. Batty

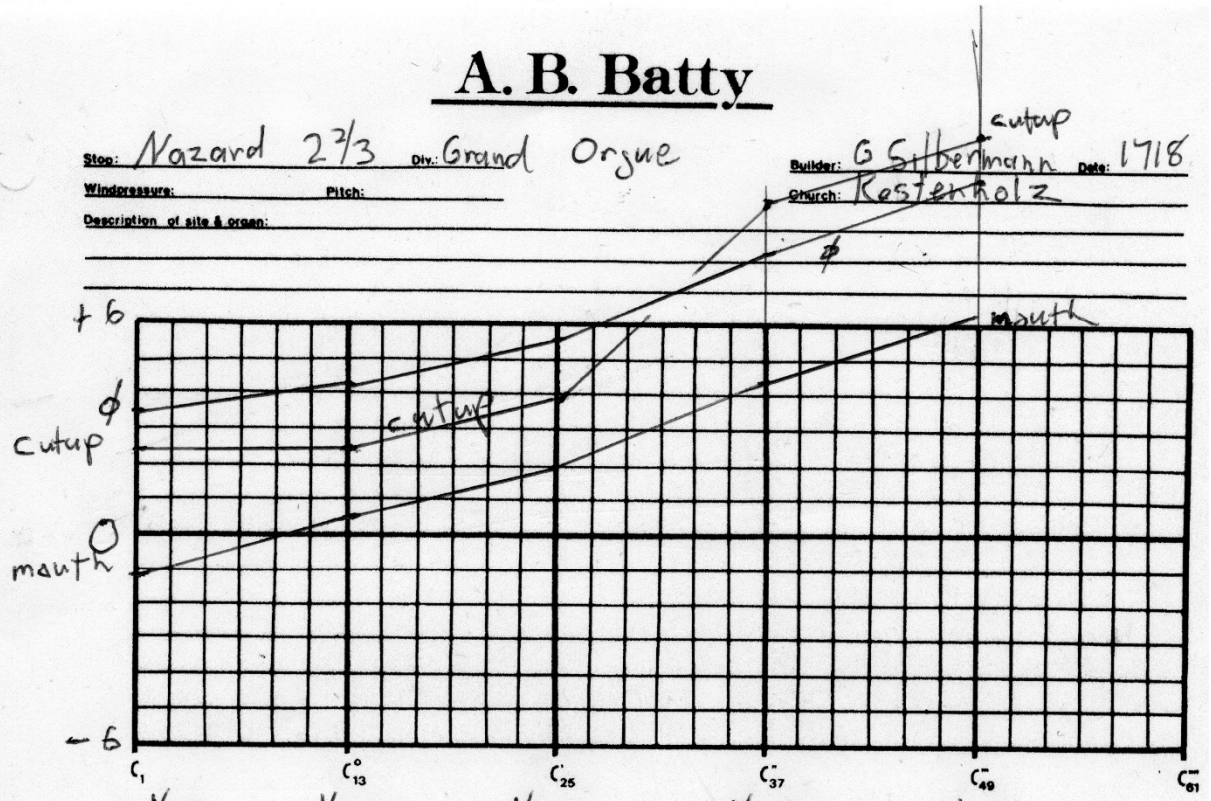
Stop: Nazard 2 2/3 Div.: Grand Orgue

Windpressure: Pitch:

Description of site & organ:

Builder: G Silbermann Date: 1718

Church: Kesternholz



	C1	C13	C25	C37	C49
Mouthwidth:	1/4.9	1/4.7	1/4.8	1/4.7	1/4.9
Cutup:	1/3.4	1/3.7	1/3.7	1/3.2	1/3.2

ACTUAL MEASURE

	C'	F#	C	f'	c''	f#''	c'''	f#'''	c''''
ϕ	79		48.5	31		20.4		13.5	
mouth	51		32.4	20.5		13.6		8.7	
cutup	14.8		8.8	5.6		4.3		2.7	

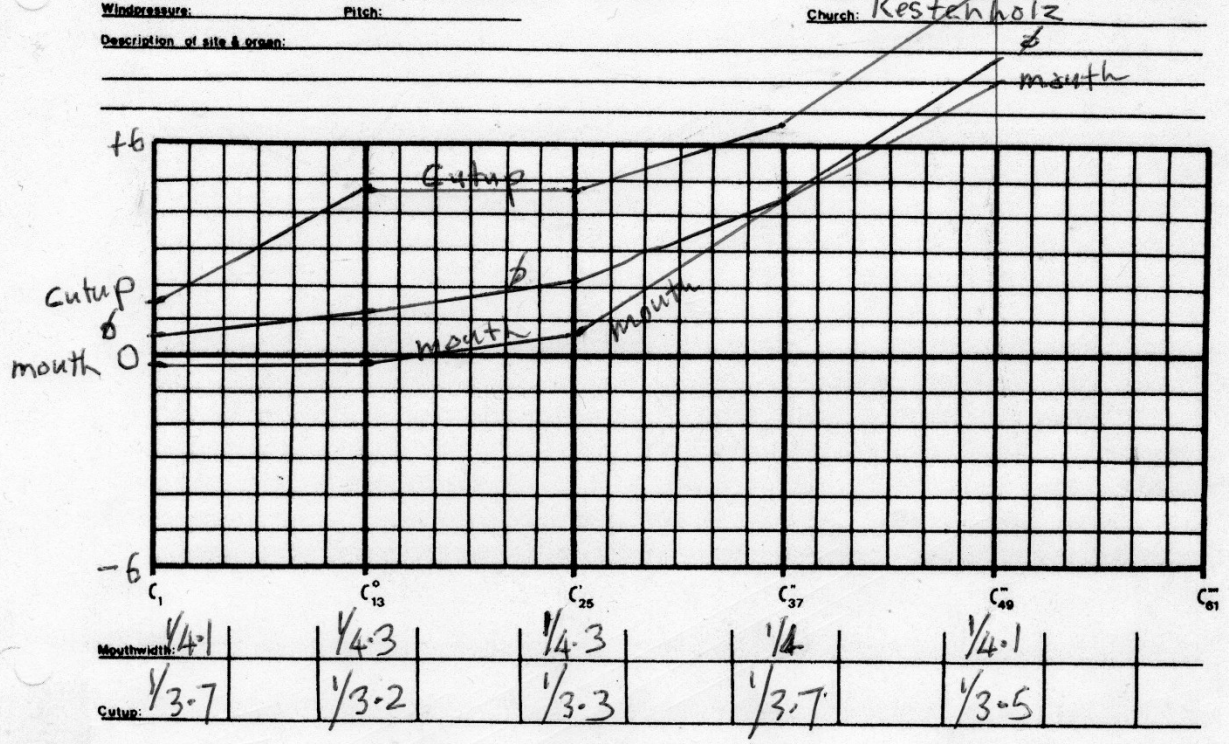
Collector Material:

A. B. Batty

Stop: Doublette 2' Div.: Grand Orgue Builder: G Silbermann Date: 1718

Windpressure: Pitch: Church: Kesten holz

Description of site & organ:



Mouthwidth:	1/4.1		1/4.3		1/4.3		1/4		1/4.1		
Cutup:	1/3.7		1/3.2		1/3.3		1/3.7		1/3.5		

ACTUAL MEASURE

	C	F#	c	f#	c1	f#1	c2	f#2	c3	f#3	c4
ø	56		34.5		21.3		14.1		10		
mouth	43		25.4		15.7		11		7.6		
cutup	11.5		7.9		4.7		3		2.2		

Collector , Material:

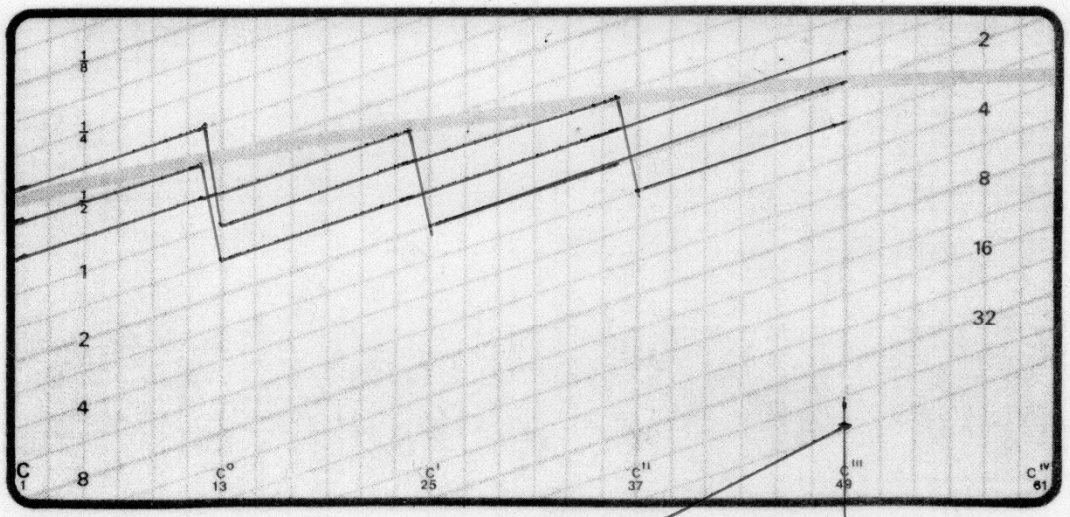
Mixture

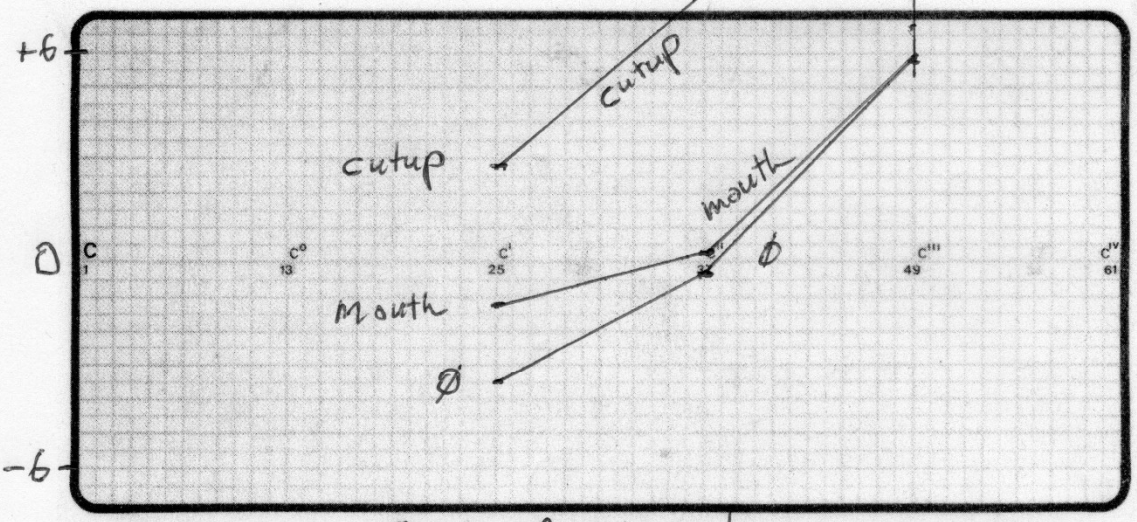
Stop Mixture III Div GO Church Kestenholz

Builder G Silberman Opus Year 1718 Scale Wind Pa. Seating Area m^2

Vol. m^3 Rev. 500/1000 s -dB Room Pitch hz. Seats Vol./Seats

Misc.

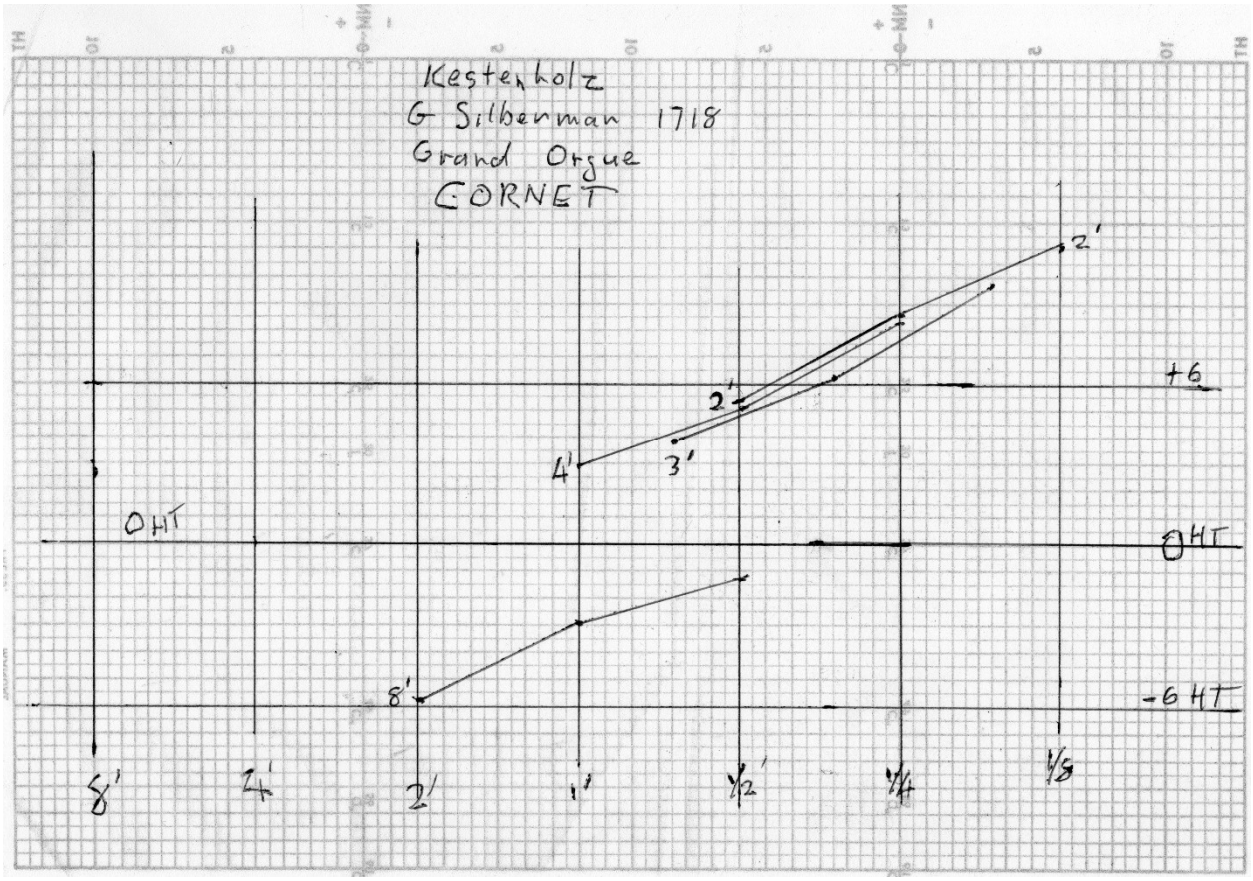




Scale of 2' rank

Note	C'	C''	C'''
Diameter	16.7	11.4	8 8
Mouthwidth	14.4	9.1	6.9
Cutup	4.3	3.2	2.2
Flue			
Toe (mouth)	1/3.6	1/3.9	1/4
Foot Pa.			
Foot % Chest Pa. (cutup)	1/3.3	1/2.8	1/3.1
Flue % Mouth			
dB.			
Ising			

Cornet – Grand Orgue



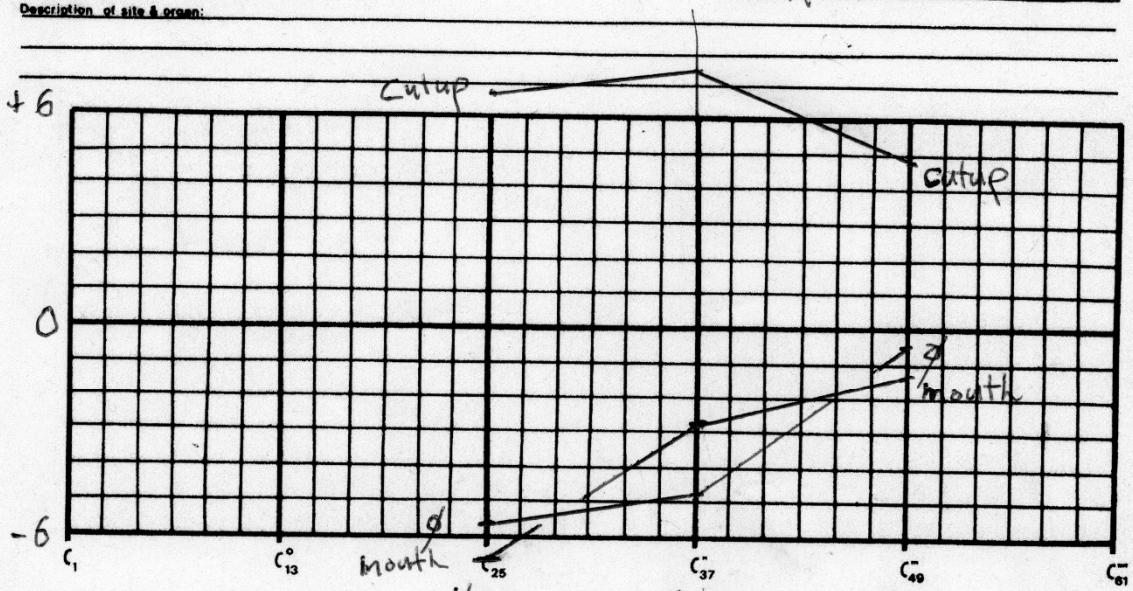
All the ranks are the same scale, except the 8’ Bourdon. Later rebuilders removed the 1-3/5’.

A. B. Batty

Stop: Cornet 8' Bourdon Qty.: Grand Org Builder: Silbermann Date: 1718

Windpressure: Pitch: Church: Kesten holz

Description of site & organ:



Mouthwidth:				1/4·1		1/3·7		1/4·1				
Cutup:				1/2·2		1/2·6		1/3·1				

ACTUAL MEASURE	C'	F#	C	f#	c1	f#1	c2	f#2	c3	f#3	c4
ø				43		26·4		19			
mouth				32·6		22·7		14·4			
cutup				14·5		8·9		4·7			
						tn					
chimney length				90·6		70		58·5			
ø				18·8		8·5		7·4			

Collector Material:

cutup 16

A. B. Batty

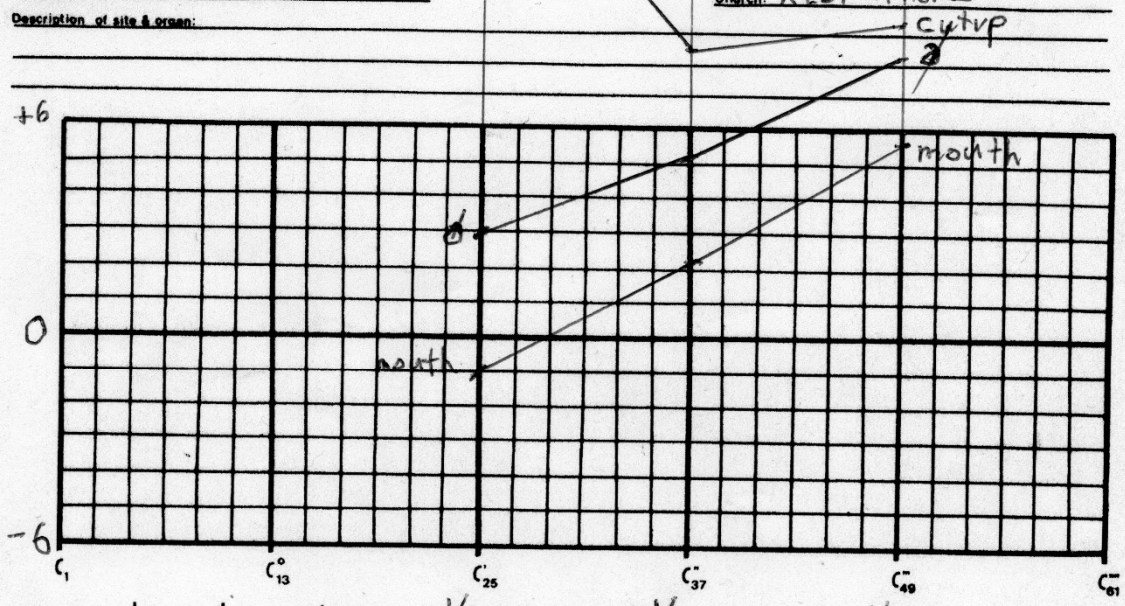
Stop: Cornet 4' Prestant Div.: Grand Org

Builder: G Silbermann Date: 1718

Windpressure: Pitch:

Church: Kestenholz

Description of site & organ:



Mouthwidth:				1/4·8		1/4·5		1/4·5		
Cutup:				1/1·9		1/3·1		1/3·4		

ACTUAL MEASURE

	C'	F#	C	f'	c'	f#'	c''	f#''	c'''	f#'''	c''''
ϕ				37·3		24·2		16·5			
mouth				24·6		16·8		11·6			
cutup				13		5·5		3·4			

Collector Material:

A. B. Batty

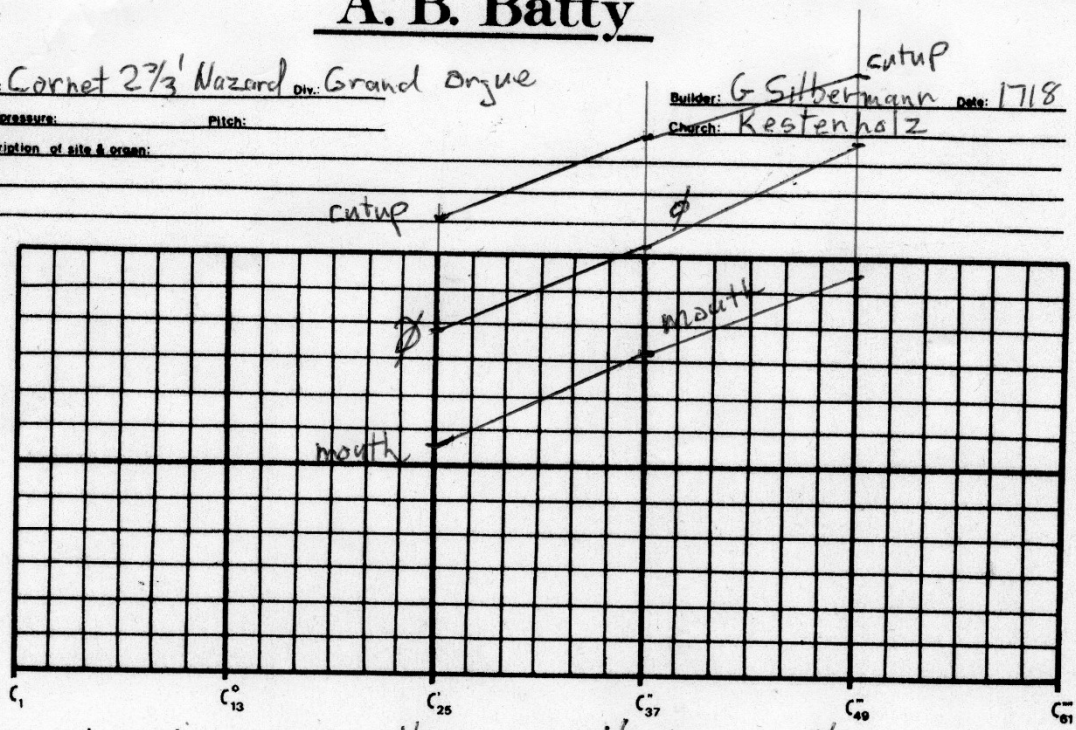
Stop: Cornet 2 2/3' Nazard Div.: Grand Orgue

Windpressure: Pitch:

Description of site & organ:

Builder: G Silbermann Date: 1718

Church: Kestenholz



Mouthwidth:				1/4·6		1/4·6		1/4·8		
Cutup:				1/3		1/3		1/3		

ACTUAL MEASURE

	C'	F#	C	f'	c'	f#'	c''	f#''	c'''	f#'''	c''''
ϕ					28.5		18.7		13		
mouth					19.3		12.9		8.5		
cutup					6.4		4.3		2.8		

Collector Material:

A. B. Batty

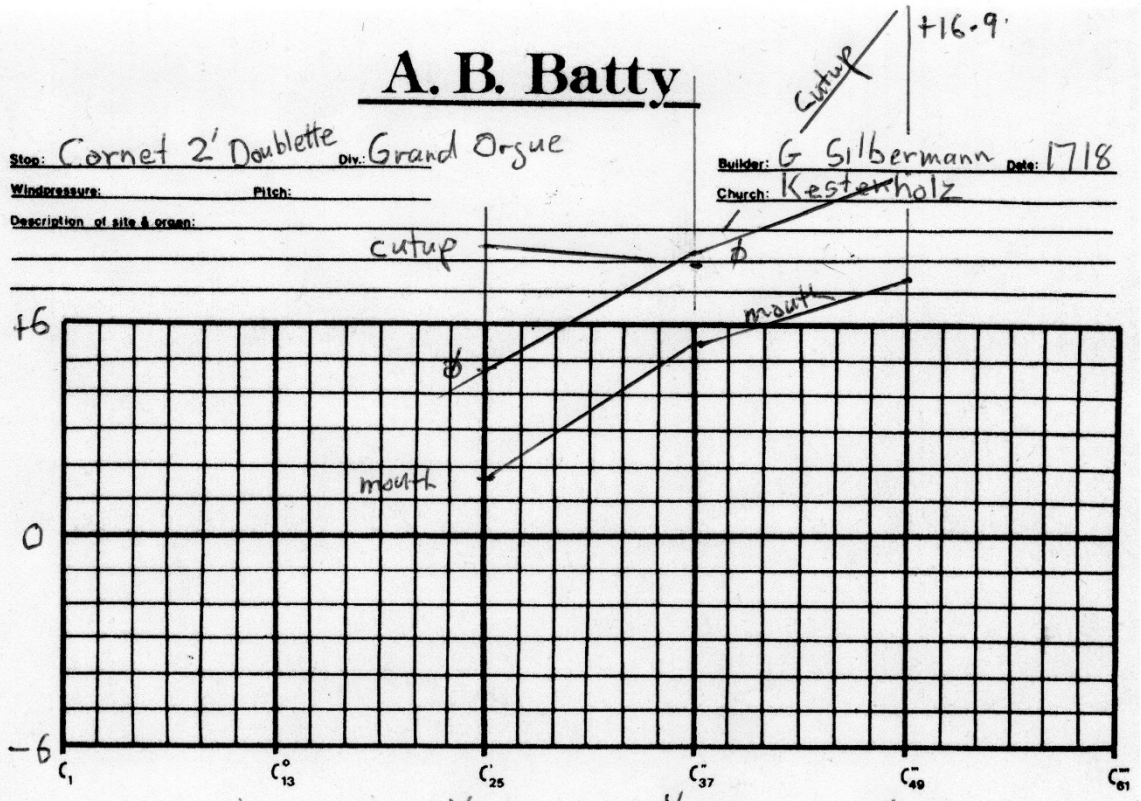
Stop: Cornet 2' Doublette Div.: Grand Orgue

Builder: G Silbermann Date: 1718

Windpressure: Pitch:

Church: Kesternholz

Description of site & organ:



Mouthwidth:				1/4.5		1/4.5		1/4.7			
Cutup:				1/3		1/3.6		1/2.6			

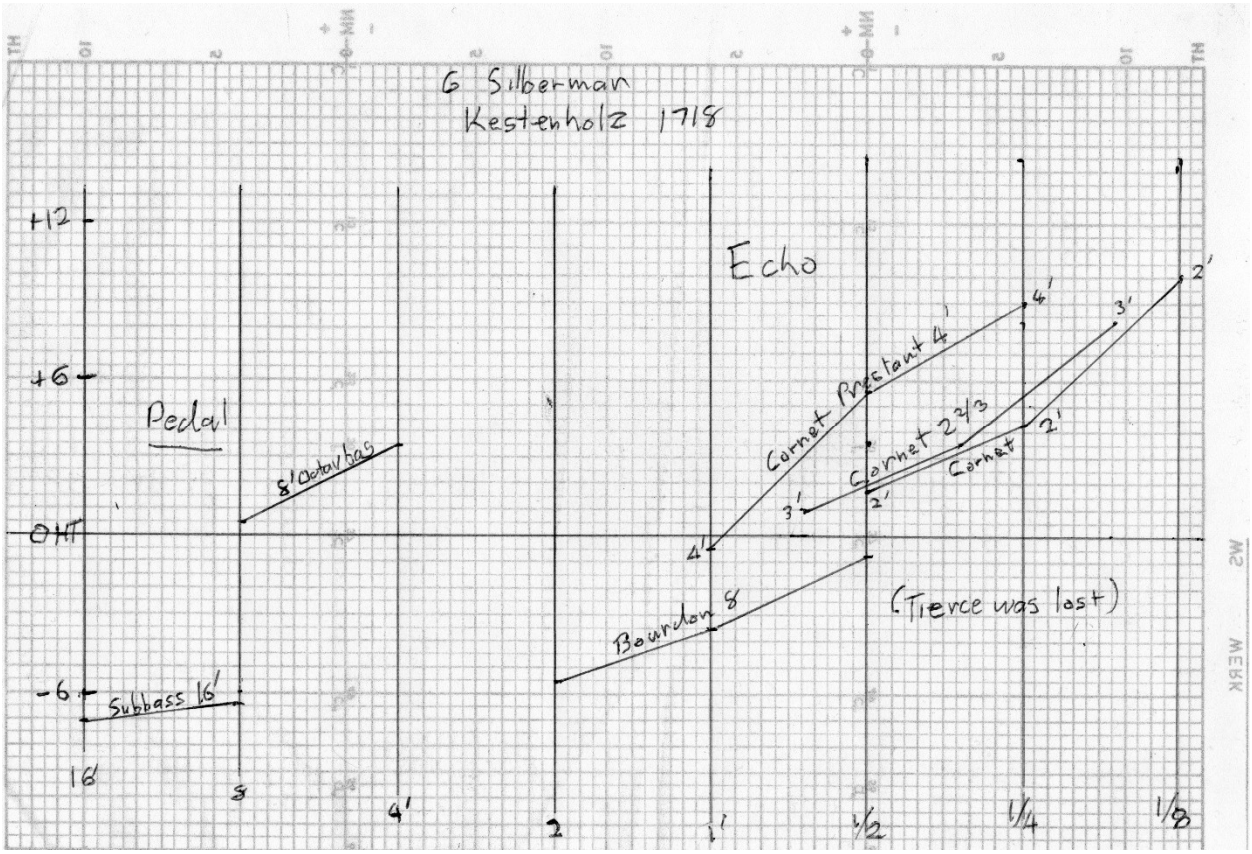
ACTUAL MEASURE

	C	F#	c	f#	c1	f#1	c2	f#2	c3	f#3	c4
ø					23.8		16.5		11		
mouth					16.5		11.5		7.4		
cutup					5.5		3.2		2.8		

Collector Material:

kestenholz GO Cornet 3'

Pedal and Echo

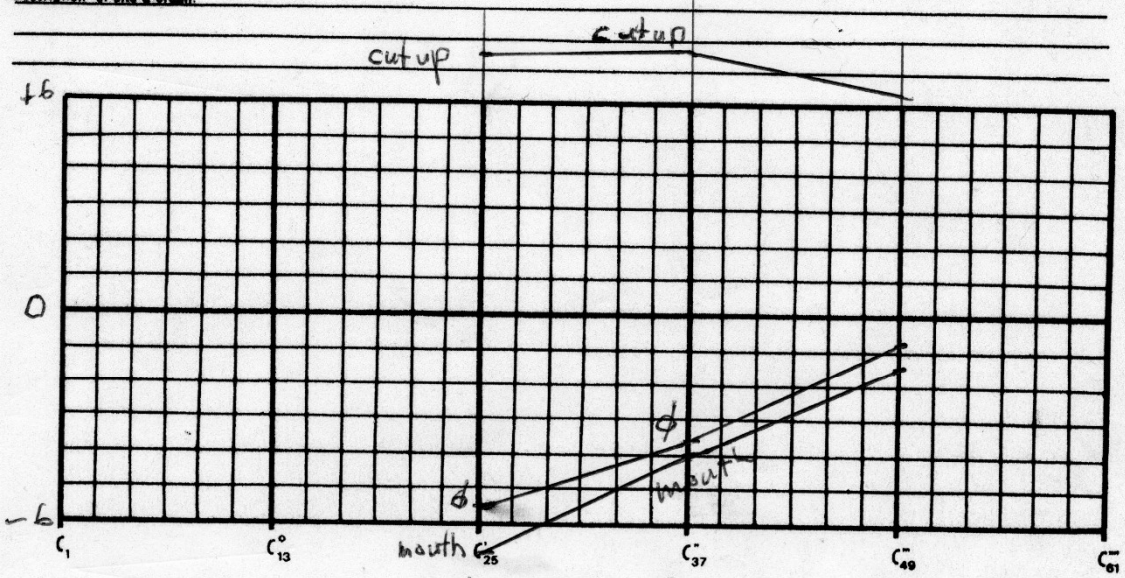


A. B. Batty

Stop: Bourdon 8 Div.: Echo c'-c''' Builder: G Silbermann Date: 1718

Windpressure: Pitch: Church: Kestenholz

Description of site & organ:



Mouthwidth:				1/4·2		1/4·1		1/4·1				
Cutup:				1/2·2		1/2·4		1/2·9				

ACTUAL MEASURE	C'	F#	C	f#	c'	f#'	c''	f#''	c'''	f#'''	c''''
⌀					43·3		28		18·8		
mouth					32.6		21·7		14·5		
cutup					15		9		5		
chimney ⌀					10·5		9		7·2		
chimney length					93·5		70		53		

Collector Material:

A. B. Batty

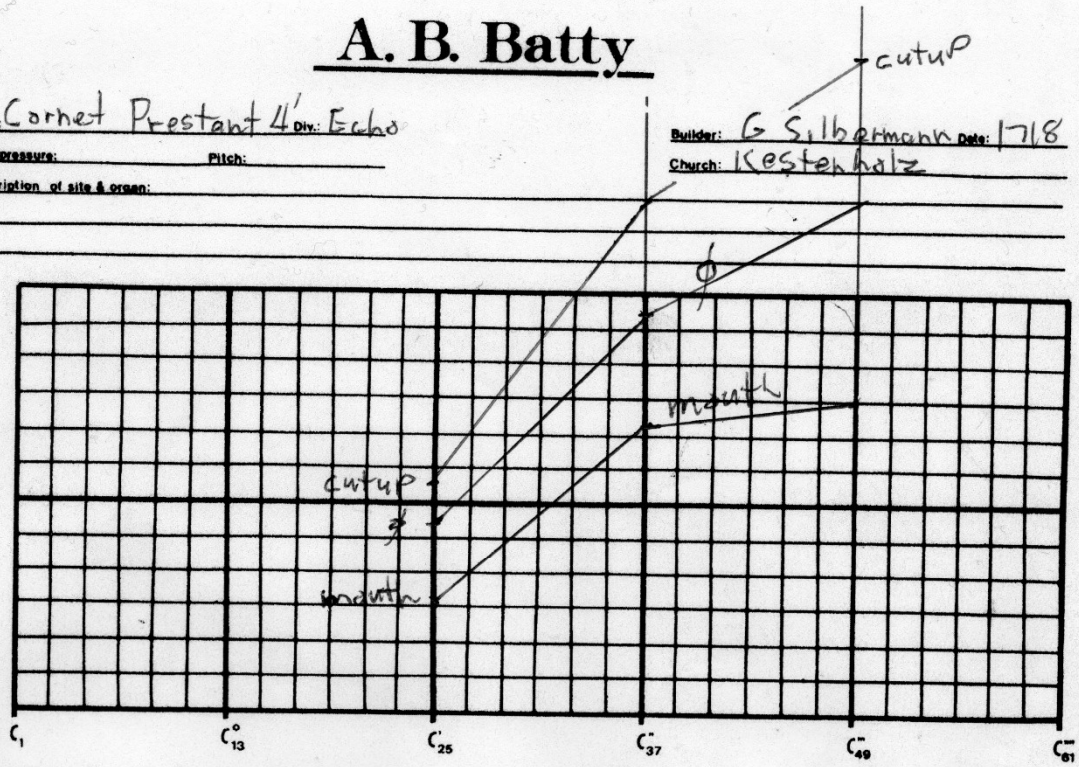
Stop: Cornet Prestant 4′ Div.: Echo

Windpressure: Pitch:

Description of site & organ:

Builder: G. Silbermann Date: 1718

Church: Kesternholz



Mouthwidth:

Cutup:

ACTUAL MEASURE

	C	F#	C	f#	c1	f#1	c11	f#11	c111	f#111	c1V
ϕ				32			24.9		17.1		
mouth				22.5			17		10.4		
cutup				6.6			5.6		4		

Collector

Material:

A. B. Batty

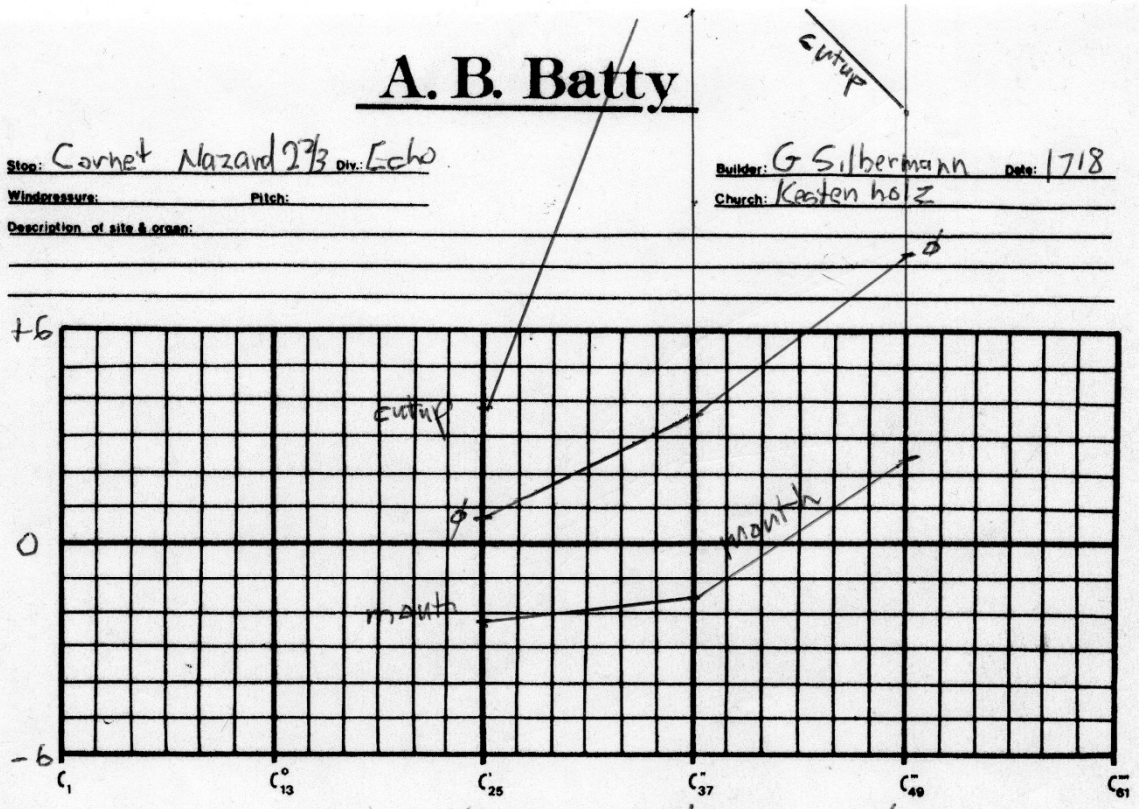
Stop: Cornet Nazard 2 2/3 Div.: Echo

Windpressure: Pitch:

Description of site & organ:

Builder: G Silbermann Date: 1718

Church: Kasten holz



Mouthwidth:				1/4·5			1/5			1/5·2	
Cutup:				1/3·1			1/1·5			1/2·6	

ACTUAL MEASURE

	C'	F#	C	f'	c1	f#'	c''	f#''	c'''	f#'''	c''''
ø					24·9		16·8		12·3		
mouth					17·3		10·5		7·4		
cutup					5·6		6·8		2·8		

Collector , Material:

A. B. Batty

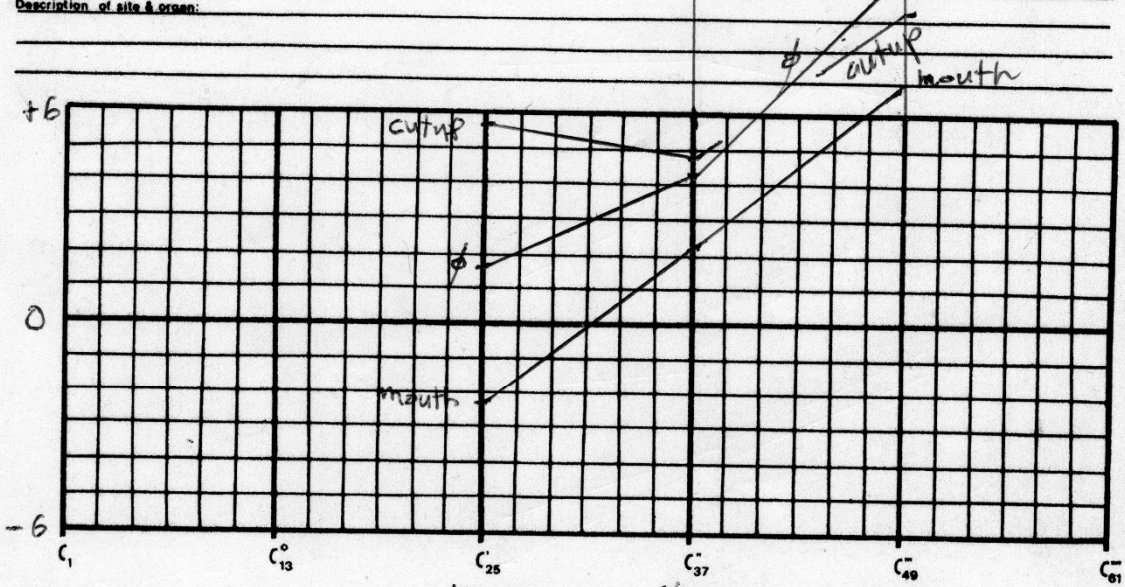
Stop: Cornet Doublette 2 Div.: Echo

Windpressure: Pitch:

Description of site & organ:

Builder: G Silbermann Date: 1718

Church: Kesten Kolz



Mouthwidth:				1/4·8		1/4·4		1/4·7			
Cutup:				1/2·8		1/3·6		1/3·7			

ACTUAL MEASURE

	C'	F#	C	f#	c'	f#'	c''	f#''	c'''	f#'''	c''''
ϕ					20·9		13·9		1		
mouth					13·8		10		7·3		
cutup					4·9		2·8		2		

Collector , Material:

A. B. Batty

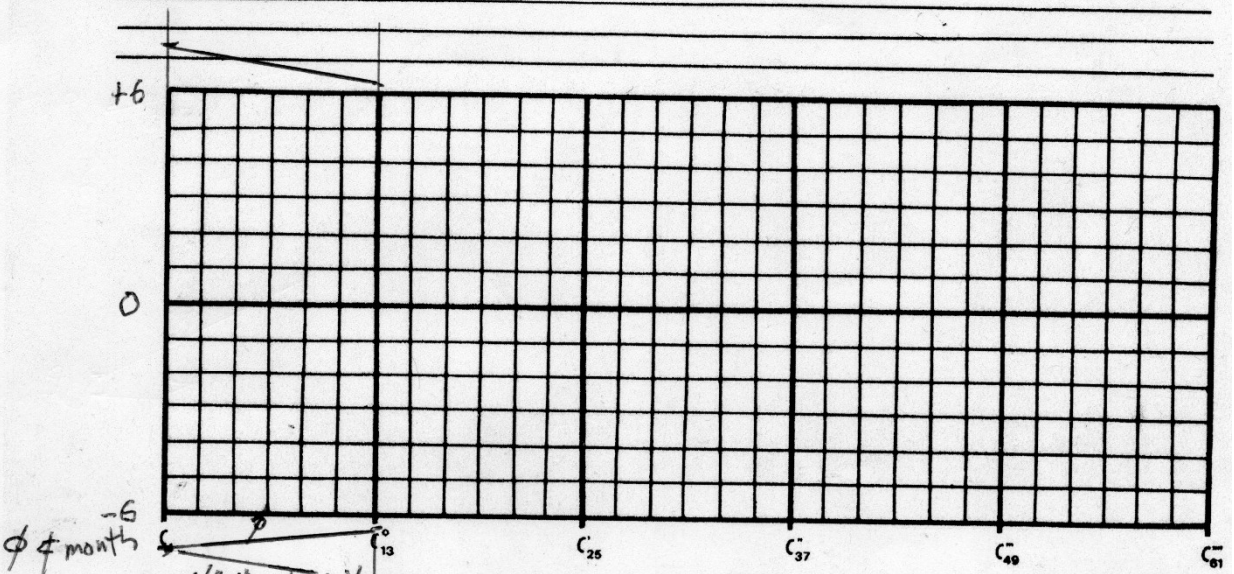
Stop: Subbass 16' Div.: Ped

Windpressure: Pitch:

Description of site & organ:

Builder: G Silbermann Date: 1718

Church: Kestenholz



Mouthwidth:	1/4 mouth		1/4.5								
Cutup:	1/2.2		1/1.9								

ACTUAL MEASURE

	C'	F#	C	f'	c1	f#'	c''	f#''	c'''	f#'''	c''''
thaw ϕ	194.5		108.7								
depth	193		122								
mouth	154		76								
cutup	71		40								

Collector Material:

A. B. Batty

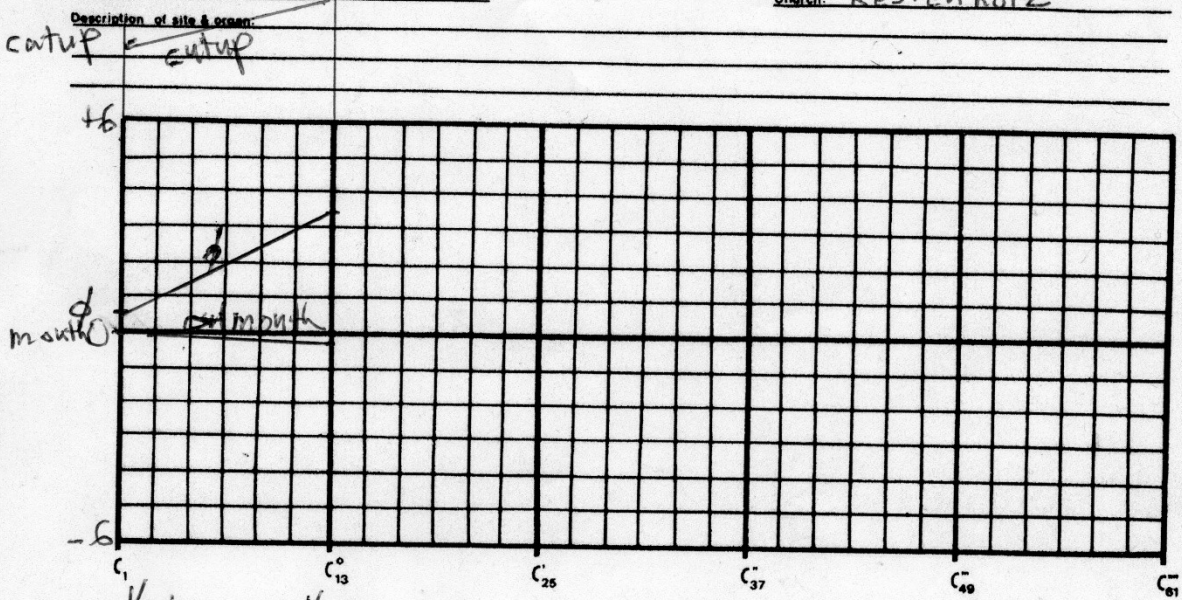
Stop: Octavbas 8' Div.: Ped

Builder: G Silbermann Date: 1718

Windpressure: Pitch:

Church: Kestenholz

Description of site & organ:



Mouthwidth:	1/4.1		1/4.7							
Cutup:	1/2.8		1/2.6							

ACTUAL MEASURE	C'	F#	C	f#	c'	f#'	c''	f#''	c'''	f#'''	c''''
ø	158		107								
mouth	122		72								
cutup	44		28								

Collector , Material: