MEDIEVAL ORGAN ART

4

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ORGELPARK

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The Van Straten Organ at the Orgelpark as a Historical Document

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Orgelpark Research Report 3

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EDITOR HANS FIDOM

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Orgelpark and VU University

The Orgelpark is a concert venue in Amsterdam. Its aim is to integrate the organ into musical life in general. The Orgelpark initiated the Orgelpark Research Program in 2008.
The Orgelpark Research Reports are published in cooperation with the Chair Organ Studies at VU University Amsterdam.

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Orgelpark Research Report 4

Introduction

Medieval Organ Art

On April 21, 2012, the Orgelpark inaugurated the Van Straten Organ. The organ was built by the organ building firm Orgelmakerij Reil (Heerde, The Netherlands). The concept of the organ was based on research conducted by Wim Diepenhorst on behalf of the Dutch Cultural Heritage Agency (Dutch: "Rijksdienst voor het Cultureel Erfgoed", RCE). The project was initiated by Diepenhorst's RCE-colleague Rudi van Straten. The Orgelpark decided to honor Van Straten by naming the organ after him.

The Van Straten Organ...

The Van Straten Organ is a historically informed representation of the organ Peter Gerritsz built in the Nicolaïkerk in Utrecht in 1479. Essential parts from 1479 have been preserved, including the case, the Blokwerk windchest of the main manual, a considerable amount of pipes, and action parts. Musicologist Jan van Biezen was the first to investigate this material. Wim Diepenhorst developed new points of view. Both published about their research in Dutch only.[1]

... as a Historical Document

Since its inauguration, the Orgelpark has organized three colloquia to discuss questions raised by building, playing, and interpreting the Van Straten Organ: on September 15, 2012, on October 26, 2013, and on December

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1 Jan van Biezen. *Het Nederlandse Orgel in de Renaissance en de Barok / In het bijzonder de school van Jan van Covelens*. Utrecht: KVNM, 1995 (Jan van Biezen was assisted by his student Koos van de Linde / The KVNM prepares a German edition of Van Biezen's book, edited by Van de Linde). Wim Diepenhorst. "Beschrijving van het orgel". In Henk Verhoef, (ed.), *Het oude orgel van de Nicolaikerk te Utrecht*. Zutphen: Walburg Pers, 2009, 205-247.

3, 2016. In 2013, the annual three-day International Orgelpark Symposium, which then took place on June 6-8, was dedicated to the the Van Straten Organ as well.

Music

This Report contains extended and/or revised versions of selected lectures presented on these occasions. They include a considerable number of music examples: Christophe Deslignes played the Van Straten Organ on June 8, 2013, Harald Vogel on October 26, 2013 (additional recordings were made on March 14, 2014), and Manfred Novak on December 3, 2016 (additional recordings were made on March 8, 2017).

Contributions

The first essay in this Report is an extended version of the keynote speech Kimberly Marshall opened the Symposium in 2013 with. She introduces its theme by proposing "that the Van Straten organ can be read as a document to uncover new ways of creating medieval music for contemporary audiences." Following her keynote, the Van Straten Organ is played and discussed by Harald Vogel, who considers the Van Straten Organ Project "one of the most important contemporary initiatives in European organ building", and by Manfred Novak, who looks into the Klagenfurt tablature, and, in a second contribution, documents what we learn about the Van Straten Organ when we play Josquin intabulations on it. David Fallows then looks into the *Buxheimer Orgelbuch,* which was compiled only a few decades before the Gerritsz Organ had been built. Following David Fallow's example, David Catalunya looks into music made a century earlier in Castile, and Dominique Gatté presents new fourteenth century manuscript findings in Alsace.

The three next contributions to the Report focus on the Gerritsz organ. Wim Diepenhorst and Rogér van Dijk map its history, while Koos van de Linde proposes a different interpretation of the surviving elements of the instrument than Diepenhorst applied when preparing the plans for the Van Straten organ. Asked to react to the points of view brought forward by Koos van de Linde, Diepenhorst assured the editor that an extended publication about his research is in preparation.

The final contribution to the Report focuses on the word "Blokwerk": Jaap Jan Steensma explores its fascinating history.

Abstracts and biographies

Each contribution to the Orgelpark Research Reports is followed by an abstract and a short biography of the author.

I

Kimberly Marshall - Is this still Medieval? Contextualizing the Van Straten Organ

I am extremely honored to present the keynote lecture for this symposium. A new instrument, especially one that emulates a style over 500 years old, is a cause for celebration! I propose that the Van Straten organ can be read as a document to uncover new ways of creating medieval music for contemporary audiences.

I am reminded of a similar colloquium, almost 20 years ago, in 1995, at the Abbey of Royaumont, where Antoine Massoni built an organ inspired by Theophilus' texts. This was a completely new instrument - there were no surviving parts of that early 12th century organ. And although there were contentious aspects of Massoni's Theophilus organ, it proved to be a rich resource in recreating early traditions of music making. I remember how exciting it was to explore the instrument and to learn from others who were similarly passionate about medieval organs.

Many of these same learned colleagues are here for this symposium. Again, a new instrument has brought us together: the Van Straten organ is the impetus for a celebration of one of our earliest traditions. This symposium provides an ideal opportunity to share our research and to speculate about issues of organ design, pipe scalings, mixture dispositions, tuning, registration, etc.

Rosetta Stone

Is the Van Straten organ a sort of Rosetta Stone in recreating the organ culture of the late 15th century? Napoleon's soldiers discovered the Rosetta Stone in 1799, some three centuries after Peter Gerritsz built an organ for the Nikolaïkerk in Utrecht. It had been inscribed c 196 CE to reestablish the rule of the Ptolomaic kings over Egypt. This is about the time that

The Van Straten Organ

The shutters contain paintings made by Kik Zeiler

hieroglyphics ceased to be used. The artifact became the key to deciphering Egyptian hieroglyphics, because it reproduced the same text in two other scripts: demotic (the native script used for daily purposes) and Greek (the language of the administration). Rosetta Stone is now used as a general term for an essential clue in unlocking a lost tradition. Can the Van Straten organ similarly answer our questions about late-medieval organs and their music? The levels of accretion on an important organ such as this introduce a problem not encountered on an artifact like the Rosetta Stone. To "read" the Gerritsz organ as a historical document requires establishing its original state. Exhaustive work must be conducted to identify which parts date from which periods and builders. Dutch scholars have studied the surviving parts of the Peter Gerritsz organ, using archival documents to learn about 15th-century organ culture in the Netherlands.

An interesting parallel with the Rosetta Stone is the removal from a museum for safety during a war. While the pipework of the Gerritsz organ was crated for protection during World War II, the Rosetta Stone was moved from the British Museum towards the end of the First World War, in 1917. For the next two years, the Stone resided 50 feet under ground in a station on the Postal Tube Railway at Holborn.

Research

The empty case of the Gerritsz organ was given to the Koorkerk in Middelburg, where it remains to this day. Jan van Biezen was one of the first to provide a detailed account of the crated material in his seminal book *Het Nederlandse Orgel in de Renaissance en de Barok / In het bijzonder de school van Jan van Covelens* (Utrecht: KVNM, 1995). Four years ago, detailed articles concerning the organ were published in *Het oude orgel van de Nicolaïkerk te Utrecht* (Zutphen: Walburg Pers / Cultural Heritage Agency, 2009) edited by Henk Verhoef. This scholarship increased interest in the Gerritsz organ and its implications for late-medieval organ culture in the Netherlands.

Because the instrument remained in use for centuries, it was altered to keep it current with changing musical practices. The exact timing and nature of these changes is open to interpretation. Not surprisingly, there have been conflicting interpretations of the evidence for the organ's original 1479 state. Peeling back the layers of the additions and rearrangements, notably that

by Gerritz's grandson, Cornelis, was the first task in order to determine which material survives from the original instrument. In Bart van Buitenen and Koos van de Linde's article in *Organ Yearbook* 41 (2012 / "Struggle for a crown witness: the Peter Gerritsz organ of the Nicolaïkerk in Utrecht"), they conclude that these elements date from the original instrument: organ case, Blokwerk chest, Blokwerk rollerboard, 11 front pipes, and at least 27 interior pipes.

The next stage in reconstructing the Peter Gerritsz organ is speculating about how the original material might have fit into a whole. Jan Van Biezen's canonic study has provided information about general trends in Dutch organ building at the time Gerritsz was building the Nicolaïkerk organ. Van Biezen's overview of the Netherlands organ c1440-1500 suggests that there would have been 2 keyboards, a Grote Werk or Principaal Blokwerk and a Positief division of some sort with a separable foundation sound (Doof) and a Mixture. There might also be a short compass of pedals.

The Van Straten Organ

These basic features are present on the specification of the Van Straten organ, devised by Wim Diepenhorst, who very kindly answered my queries about the instrument's design and sound. There are two manuals, an undivided Blokwerk of increasing ranks towards the treble (VII-XVIII), as well as a second division, in this case a Bovenwerk, with a separable Doof, Positie and the added bonus of a Cimbel, a three-rank mixture with pipes at the octave, quint and terz. An octave of pedals play Principal pipes that are located behind the case of the organ. Let's now examine each of these components a bit more closely.

The main manual has a 3 1/2-octave compass (H-f2), one octave more than the large organ façade depicted on f. 131 of Arnaut de Zwolle's treatise of c1440. The mixture shows an accumulation of octave and fifth ranks that begins with 7 ranks at the lowest end of the keyboard and expands to 18 ranks at the highest.

This is the layout of the 2 1/2-octave organ whose action and façade are illustrated in Arnaut's treatise, compiled about 40 years before the Gerritsz organ was installed in Utrecht. The lowest pipes are arranged in towers to either side of the middle and highest octave, whose pipes are arranged with

the tallest in the middle, in the shape of a bishop's miter. The Gerritsz façade represents a later development where the tallest pipes of the organ are placed in a central flat, with the intermediate range at the sides and the shorter pipes for the treble and Bovenwerk arranged decoratively in the middle flats.
The Bovenwerk compass is 3 octaves, from low F-f2, a fifth less in the bass than the Hoofdwerk. The Doof rank has three different components: the lowest octave is comprised of 8- and 4-foot principals transmitted from the Hoofdwerk, the middle octave has two 8' ranks whose pipes are found in the façade, and the highest octave contains three 8' ranks located on the Bovenwerk windchest (see the picture below showing these 3 ranks for the Doof as well as 8 ranks for the Positie). This disposition creates a clear bass and a singing treble that functions very well for the typical texture of late-medieval music.
The photo to the right shows the four stop knobs to the right of the console. The original function of the bottom one is unknown. It was connected to a roller and a pallet in the Hoofdwerk, so perhaps it served as a Ventiel of some sort.
The pedal compass of the Van Straten organ contains one octave of pipes from

View on the Oberwerk chest, C#-side

Up to eight ranks for the Positie and three 8' ranks for the Doof.

FGA-f, that is chromatic from A. The octave span is typical of surviving documentation, such as the pedalboard of the Norrlanda organ, where each quatrefoil pedal key plays two pipes simultaneously sounding fourths and fifths. The Halberstadt pedalboard as described by Praetorius in 1619 contained a fully chromatic octave from B to either b-flat or b. This constituted the lowest octave of the Halberstadt compass, sounding the principals of the organ with the Hintersatz. If the mixtures weren't desired, there was a Bassklavier of levers to operate the same range of pipes without the Hintersatz.

Context

Having perused the general history and tonal components of the van Straten organ, we are now at a point to contextualize it, with a view to answering my topic question: is this still a medieval organ? We'll assess what we know regarding the sound scape of the 15th-century, the use of the organ around the time that Peter Gerritsz built his instrument, and the type of music that we know to have been played on organs.

Everyone agrees that the Peter Gerritsz organ was composed of principals with added octave and fifth ranks above them. There are differences of opinion about the exact make-up of these tonal features, relating to varying interpretations of the surviving material and the original disposition of the organ.

The Van Straten organ possesses the same tonal palette of principals and mixtures. We've already seen the disposition of the main Blokwerk, with increasing ranks of pipes that emphasize the treble. This is the main type of sound associated with large medieval organs, and it accentuates the upper line of music, which may explain the preponderance of this texture in late-medieval music. On the Bovenwerk, we find a similar accretion of ranks in the Positie. The Doof also emphasizes the treble as we've seen: its second octave shifts to façade pipes which speak from the front of the instrument, while the third octave has an additional 8′ rank. These mixture dispositions of the Bovenwerk show how the Positie increases in octave and fifth ranks through the compass, while the Cimbel contains three ranks from bass to treble: an octave, a fifth and a third. The order of these three components alternates with each break:

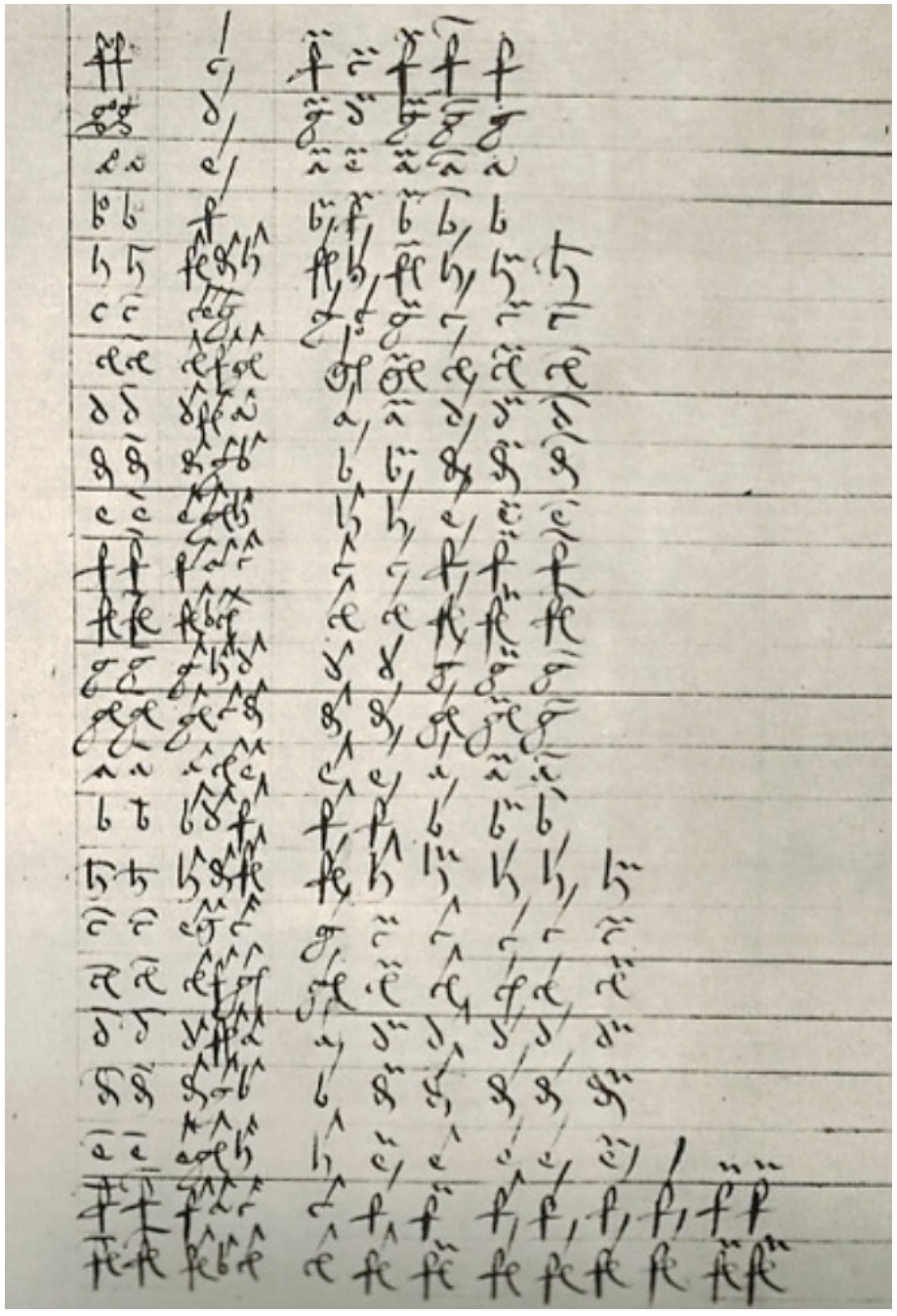
f0						2/3	1/2	2/5
g#0					4/5	2/3	1/2	
c1				1	4/5	2/3		
f1			1 1/3	1	4/5			
f#1		1 3/5	1 1/3	1				
c2	2	1 3/5	1 1/3					

If we consult the treatise of Henri Arnaut de Zwolle, we find detailed mixture specifications that demonstrate three important innovations by the middle of the 15th century: the use of breaks, a progressive increase of mixture ranks to equalize the sound so that the treble sings out over the bass; the Blokwerk divided into separate entities (it is not clear if these could be used independently); and the inclusion of the third-sounding rank.

These three parts of a mixture are diagrammed on f. 133v of Arnaut's treatise. On the left, you see the Principals, starting at two unison ranks and increasing to four by the top of the compass. In the middle are the Cymbale ranks, starting on the fifth note in the bass, always sounding three ranks at the octave, fifth, and third, as on the Bovenwerk of the Van Straten organ. Finally, at the right, the Fourniture, comprised of octave and fifth ranks, like the Blokwerk and Positie of the Van Straten organ. Having mixtures with octaves and fifths, as well as a Cymbale with both fifth and third harmonics, provides variety when playing late-medieval music.

The overriding concern is how best to provide registrations for the characteristic late-medieval texture of slow moving lower part(s) with a faster, ornamented upper voice. We've already seen how the Blokwerk on the main manual and the Doof and Positie on the Bovenwerk enhance this predominant texture in late-medieval organ music, emphasizing the treble. Possibilities for the sustained lower voice and the color of the upper voice are increased on the Van Straten organ by the presence of pedals and the high-pitched Cimbel.

The winding system of the Van Straten organ is composed of four large blacksmith's bellows that can be hand operated by one person. The American builder Charles Fisk called the winding the organ's "breath of life," arguing that flexible winding creates a vivacity eliminated in the rock steady pressure of many modern organs.



Treatise Henri Arnaut de Zwolle, folio 133v

From left to right: Principals (II), Cymbel (I-III), Fourniture (V-IX). The rest of the compass is shown on the following folio of the manuscript.

Christophe Deslignes plays the Van Straten Organ

Improvisation on Redeuntes in Ut (Buxheimer Orgelbuch)

[sound file only available in the electronic version of this book]

play stop

In the final concert of the symposium, Christophe Deslignes assigned five calcants with specific tasks at specific moments: two of them, gently pushing the upper blades of two bellows in turn, created the 'modo tremolo'; one other had to significantly increase the wind pressure by pulling a rope attached to the blade of one of the bellows ('modo sforzando'); whereas the two 'normal' calcants not only operated the bellows in the traditional way but also kept the bellows from moving at given moments, thus creating the 'modo armonico'. Deslignes did this experiment on special request from the Orgelpark; he was asked to try and see whether a large medieval organ like the Van Straten organ would be capable of the same dynamics in music as the organetti Deslignes plays by varying the wind pressure.

Having examined the basic tonal properties, or sound scape, of the Van Straten organ, we are now in a position to contextualize further the instrument, by assessing the general use of the organ in the late 15th century. Iconographical evidence is abundant and has inspired many experiments with instrument design and use. Elsewhere I have argued that characteristics of small organs shown in symbolic contexts, such as Hans Memling's angel organist (shown on the next page), sometimes reflect real instruments which the artist observed. Depictions of late-medieval organs occur in some surprising contexts: the picture shown below is of a 15th-century illustration of the Book of Job. Job's friends attempt to console him (naked on his dung heap) by playing music. This trio shows the three main intabulating instruments of the late medieval-early Renaissance: the harp, the organ and the lute. Each of these instruments was capable of playing polyphonic music,

Christ Surrounded by Musician Angels (detail of right panel)

Hans Memling (1430-1494)

Royal Museum of Fine Arts, Antwerp

whether settings of Mass movements or chanson intabulations. We know from surviving references and notated music that organs played in both liturgical and secular settings. One striking aspect of both the *Codex Faenza*

Job being comforted by his friends

15th-century French manuscript

Bibliothèque Nationale MS fr. 1225, f. 40

(c. 1430) and the *Buxheimer Orgelbuch* (c. 1460) is the combination of liturgical music with chanson intabulations and dance arrangements.
Of course, the Peter Gerritsz organ was originally placed in the Nikolaïkerk and was presumably intended to provide liturgical music. Its impressive size is the main reason it was preserved. Rather than being discarded and replaced, it was reworked over the course of centuries to accommodate changing musical tastes. As M.A. Vente wrote in *Die Brabanter Orgel*, we have more information about the minority of large organs than about small ones. Monetary disbursements for these large organs are noted in church accounts, sometimes with details of what would be included on the instrument. Payments to organists for playing and to organ builders for repairing – these were sometimes the same person – can yield precious information that wasn't preserved for small personal organs, even though these were more prevalent in the 15th century.

Music

Just as documentation about large organs may not reflect general organ culture, surviving 15th-century musical sources may not represent what was typically played on contemporary organs. Presumably most organ music was improvised over a tenor, by creating figuration in the right hand according to formulae presented in several manuscript sources, including Conrad Paumann's *Fundamentum Organisandi* (ca. 1452). From such "improvisation methods" it is possible to cultivate a sense of late-medieval style. I want to highlight two manuscripts that help us explore the Van Straten organ. The earliest source that is geographically close to the Gerritsz organ is the *Ileborgh Tablature* (1448), 12 pages of music in old German tablature that are now in the possession of a private collector, having been sold by the Curtis Institute of Music in the early 1980s. These contain 5 very short Praeambula. The scribe, Adam von Ileborgh, makes clear that four of the five can be transposed, suggesting their use as intonations. Also of note is the heading to the third Praeambulum, which works well "on the pedal or manual", a very early mention of playing the pedals of an organ.
The *Buxheimer Orgelbuch* is the largest collection of 15th-century organ music, with a great variety of music notated in old German tablature. Most of the pieces in the collection are song intabulations, although some of these

retain only the tenor line of the original model so they can also be considered cantus firmus compositions.
The Buxheim manuscript contains two main types of free works, pieces not based on pre-existing tenors or polyphonic models. The *Praeambula* contrast different textures, such as monophony, 3-part chords, and accompanied melody. The *Redeuntes* feature figuration in duple and triple patterns over a drone. The drone can be rendered in various ways. The *Ileborgh Tablature* suggests that pedals function well for long-held notes. Another convenient and convincing drone would have been provided by the bell in the church tower. Harald Vogel used the bell at Rysum to create the foundation for the "Redeuntes in mi" from Buxheim [his recording can be listened to in his essay elsewhere in this Report (page 43)].
Having pedals on the Van Straten organ offers additional possibilities for playing drones and slow tenor lines. The pedals can play underneath the main Blokwerk with 4 combinations of the Bovenwerk registers: BW Doof; BW Doof and Positie; BW Doof and Cimbel; BW Doof, Positie and Cimbel.
The 18 *Praeambula* in Buxheim show late-medieval organists grappling with ways to create structure in the absence of a cantus firmus or polyphonic model. These generally short pieces are characterized by textural contrast between sections. The "Praeambulum super F", for example, starts briefly with an accompanied melody leading to successions of chords and ending with a monophonic line over a drone.
Turning now to liturgical music in the Buxheim manuscript, we find only a few pieces, with a *Kyrie/Gloria* on the *Missa Santa Maria Virgine* and 2 *Magnificat* movements. The first *Kyrie* of the Maria Mass is exceptional in the presence of four voice parts and the proliferation of pedal indications, suggesting that the pedal carry the entire lower voice.
Given the survival of such interesting notated sources of music, some might argue that the vital issue of our symposium is whether the Van Straten organ realizes this music, or other music in a similar style, in a way that would be recognizable to listeners in the late 15th century. But is that really our goal here?
Two years before Peter Gerritsz built the Utrecht organ, Tinctoris published a composition treatise that denigrated music composed before c1440, as not "worthy of hearing" by the trained ear. This excerpt has been cited many

times to defend the concept of a musical Renaissance beginning in the 1430s. Probing the context of the statement, Rob Wegman has suggested that Tinctoris is referring instead to a change in musical fashion, of musical taste, as confirmed by his emphasis on listening. We each bring to our perception of music a unique history of listening, and this provides a sort of sound filter through which we experience it. Is it possible to determine the sound world of congregants at the Nicolaïkerk? Even if we were able to reproduce perfectly the sounds of the Peter Gerritsz organ, we cannot provide a "listening filter" so that today's listeners perceive it as did those who heard it in the 1480s.

21st century

The Van Straten organ is a reflection of 21st-century culture. The decision to preserve the original material rather than compromise it in a "restoration" reflects the curatorial spirit of our time. Its concept is rooted in what we know of that tradition, although there are different views on technical features of the organ, its specification and tuning in particular. We'll be hearing more about some of the technical considerations in Wim Diepenhorst's lecture. Whether or not you agree with the way the historical record has been realized, the intention was to honor the past by building a new instrument that could render late-medieval organ music convincingly to modern ears, while also providing a musical resource for creating new music.

The complexity of recreating the sounds of an organ built in 1479 requires far more than deciphering one code. Every aspect of the Peter Gerritsz organ – its pipe scales, case proportion, action and winding design, voicing, and temperament – requires a different Rosetta Stone. The Van Straten organ can only be read as a multiplicity of texts, and the interpretation of each will affect the resulting sounds.

Rather than hoping to reproduce exactly the way an organ sounded in Utrecht's Nicolaïkerk in 1479, the Van Straten organ is a stimulus for us to continue the long tradition of creativity that has characterized organ builders and organists for centuries. Over the next two days we will be exploring many facets of late-medieval organs and their repertoire, with this instrument as a focal point for our inquiries. Just like the shutters of the Van Straten organ, painted by the Amsterdam artist Kik Zeiler, this symposium will bind sacred with secular, male with female, contemporary with ancient; re-creation with creation. Let us revel in the sounds of this new organ, as did congregants at the Nicolaïkerk 500 years ago, and as hopefully will our descendants 500 years from now. May the festivities commence!

Abstract

The Van Straten organ at the Orgelpark is a reconstruction of the organ Peter Gerritsz built in 1479 in the Nicolaïkerk at Utrecht. The Gerritsz organ is still extant; the number of parts from 1479 that have survived is significant. The Van Straten organ has two Blokwerk manuals: the ranks of the lower manual (H-f2) cannot be separated, whereas on the upper manual (F-f2), the front ranks ('Doof') and back ranks ('Positie') can be played individually or together. The Doof section of the upper manual is further equipped with a Cimbel on a slider. The pedal (FGA-f2) contains one octave of pipes that cannot be turned off. Playing the Van Straten organ, one might consider it a sort of Rosetta Stone, promising a better understanding of late 15th century organ culture. The organ's structure complies with what we know from the treatise of Henri Arnaut de Zwolle (c. 1440), and its sound supports the surviving repertoire by emphasizing the treble and making possible sustained tones in the tenor. The pressure of its winding system (four blacksmith bellows) can be easily adjusted by the calcants. Thus it convincingly renders liturgical music as well as chanson and dance arrangements, common in the late Middle Ages and documented in sources such as the Buxheimer Orgelbuch (c. 1460) and the Faenza Codex (c. 1430). Improvisations, as suggested by Conrad Paumann's *Fundamentum Organisandi* (1457), show off

the instrument well, as do free preludes, such as those in the *Ileborgh Tablature* (1448). Yet the Van Straten organ is a reflection of 21st-century culture. The complexity of recreating the sounds of an organ built in 1479 requires far more than deciphering one code. Every aspect of the Peter Gerritsz organ – its pipe scales, case proportion, action and winding design, voicing, and temperament – requires a different Rosetta Stone. The Van Straten organ can only be read as a multiplicity of texts, and the interpretation of each will affect the resulting sounds.

Kimberly Marshall

Kimberly Marshall maintains an active career as an organist/scholar, performing regularly in Europe, the US and Asia. She currently holds the Patricia and Leonard Goldman Endowed Professorship in Organ at Arizona State University, having previously held positions at the Royal Academy of Music, London, and Stanford University, California. A passionate advocate of early organ music, she earned her DPhil in Music from Oxford University with a thesis entitled *Iconographical Evidence for the Late-Medieval Organ* (Garland, 1989). Her expertise in performing medieval music is reflected in her recording, Gothic Pipes: The Earliest Organ Music; to increase awareness of this repertoire, she has published anthologies of late-medieval and Renaissance organ music. Her scholarly work includes contributions to the *Grove Dictionary of Music* and the *Oxford Dictionary of the Middle Ages*.

II

Harald Vogel - The Art of the Organ along the Rhine during the Transition from the Middle Ages to the Early Modern Period

The construction of a replica of the oldest remaining organ in the Netherlands and its installation in the good acoustical setting in the Orgelpark Amsterdam, is one of the most important contemporary initiatives in European organ building.

This instrument makes it possible to perform the significant organ repertoire dating from the transition of the late Gothic period to the modern era. It fills an important gap, because it is the first time that the reconstruction of a Blokwerk organ of this size has been carried out. At the same time it is the type of organ which formed the basis for the development of the 16th-century organ art in the Netherlands. This period saw the development of the tonal and technical foundations which became standard for organs in the economically and culturally prosperous coastal areas from France to Scandinavia in the following centuries.

The original parts of the organ, which are no longer in their original location in the Nicolaïkerk in Utrecht, were used as the model for the reconstructive interpretation of the state of the organ around 1500. This was a wise decision, enabling the original parts to be preserved as important artefacts from one of the most brilliant periods of organ culture.

The reconstruction of this organ left questions open, some of which it may never be possible to answer satisfactorily. However, I do not intend to address such issues in this paper; instead, I aim to report my experiences during the Colloquium at the Orgelpark on 26 October 2013, which I was able to present to an interested audience.

The repertoire which was presented at the event on 26 October 2013 has been preserved in manuscript and printed form, dated between 1431 and 1531. It can be divided into several types:

1 Liturgical repertoire with a cantus firmus in sustained notes in the lower voice and "organized" figuration in the higher voice, consisting of established melodic models, mainly in groups of four notes. [two voices]
2 Fundamentum repertoire, presenting an abstract melodic design in the lower voice in the form of ascending and descending intervals while the higher voice features didactically systematised figuration as described above under 1. [two voices]
3 Redeuntes repertoire with sustained, continually repeated notes in the lower voice, "organized" melodic figuration in the higher voice and sometimes a third voice with imitative patterns (contratenor). This repertoire was designed to be played together with bells.[1] [two and three voices]
4 Free repertoire (Praeambula) with sustained notes in the lower voices (tenor and contratenor) and figuration with a wide ambitus in the higher voice (discant). [two and three voices]
5 Liturgical repertoire with a fragmented cantus firmus in the tenor, a contrapuntal contratenor voice and a figured discant voice. [three voices]
6 Fundamentum repertoire with two lower voices (tenor and contratenor) and a figured discant voice. [three voices]
7 Liturgical repertoire with the cantus firmus in the discant and two counterpoint voices (tenor and contratenor). [three voices]
8 Secular repertoire with songs and dances with the complete or fragmented melody in the discant or the tenor. [two and three voices]
9 Liturgical repertoire with the partly figured cantus firmus in the discant or other voices. [two to four voices]
10 Secular repertoire with the partly figured melody in the discant. [four voices]
11 Intabulation of vocal pieces. [two to four voices]
12 Free contrapuntal repertoire (Praeambula). [two to four voices]

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1 Harald Vogel. "Das Zusammenwirken von Glocken und Orgelspiel". *Musica Sacra* 103/1 (1983): 33-40.

The Blokwerk Organ at the Orgelpark

In 1479, Peter Gerritsz built a two manual organ in the Nicolaïkerk at Utrecht. The Orgelpark assigned Orgelmakerij Reil to build a reconstruction of the organ in its original state. The research was carried out by Wim Diepenhorst (Dutch Cultural Heritage Agency). The Orgelpark decided not to reconstruct the details of the case. The paintings on the schutters are made by Kik Zeiler.

I played the following program on 26 October 2013. The recordings for this Research Report were made on 14 March 2014.

Tablature of Adam Ileborgh (1448): Praeambulum super d [...]

Type 4 / three voices

This *Praeambulum* comprises a discant with rich figuration (c0-d2) and two sustained intervals (d-a and e-g#) in the lower voices. The lower voices must sound an octave lower; otherwise the discant is below the lower voices at the end. The two bourdon intervals, which sound pure in the Pythagorean tuning with the wolf between B and F sharp, were probably played on the pedal (double pedal), where the low sound of the bordunes pipes gives the correct pitch (one octave lower than written; cf. my description of the use of the pedal in Gothic organ music in the programme notes to LP ORA 3001: *Die spätgotische Orgelkunst / Harald Vogel spielt an der Orgel zu Rysum* [1982].) On the Blokwerk organ, the correct pitch is achieved when the two intervals in the left hand are played an octave lower. Playing in this way gives the Blokwerk discant, which includes a 6', the necessary 16' pitch orientation. This *Praeambulum* (No. 4 in the Ileborgh tablature) is a paradigmatic work for the full sound of a large Blokwerk organ in the mid-15th century.

Ileborgh's Praeambulum. The lower voices are played one octave lower

[sound file only available in the electronic version of this book]

play stop

Option: instructing the calcant to manipulate the wind pressure

[sound file only available in the electronic version of this book]

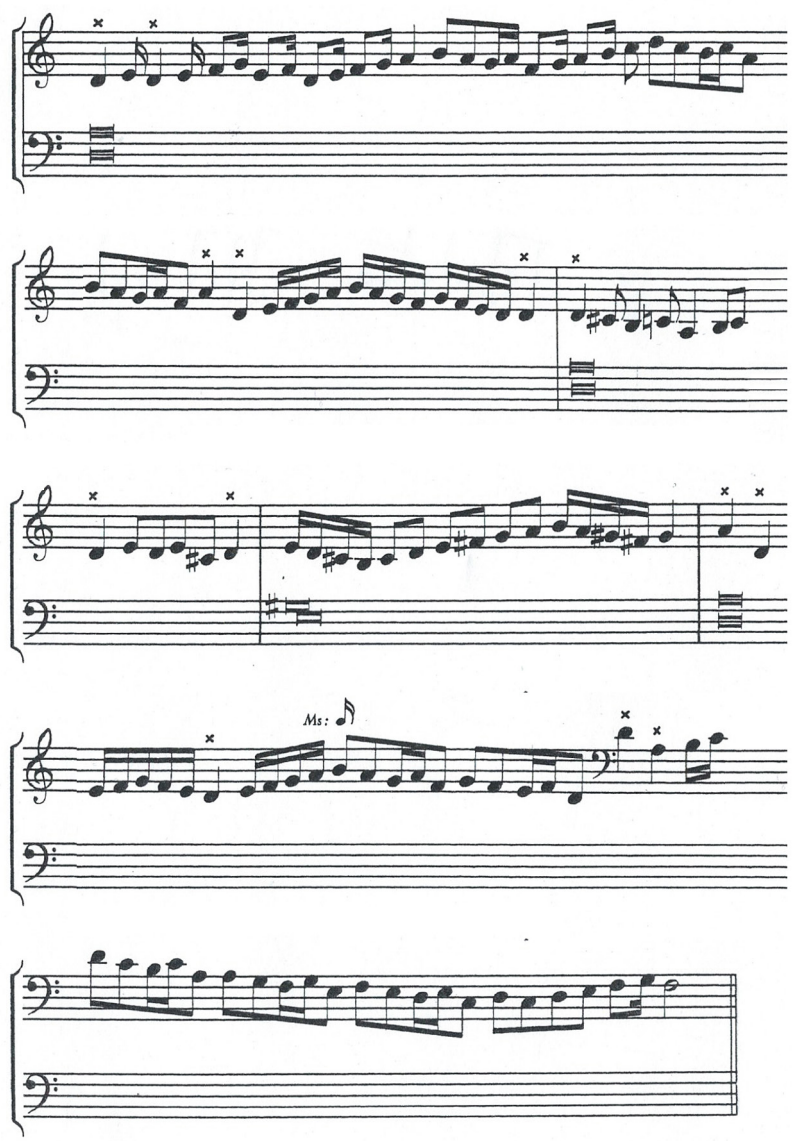
play stop

Hans Kotter (around 1510): Prooemium in re

Type 12 / two to four voices

Compared to the *Praeambulum super d* from the Ileborgh tabulature, which represents the style of the second quarter of the 15th century, the *Prooemium*

Tablature of Adam Ileborgh (1448): Praeambulum super d a f et g



in re by Hans Kotter (with the humanistic character of the Greek-sounding title) shows the dynamic musical development up to around 1500. Here

we find contrasting sections in various styles, with contrapuntal elements playing an important part. In this sense we find here a model for the development of free organ music of the following centuries up to the north German organ preludes and toccatas of the late Baroque period. Another element in this free work from Hans Kotter's tablature, which comes from the collection of the Basel humanist Bonifacius Amerbach, are models from vocal music, for example the two two-voice sections in the middle of the piece which alternate between higher and lower registers (higher and lower choirs) in the style of Josquin. The piece begins in three voices and corresponds to the Redeuntes style of the 15th century. The last part took Hofhaimer's style of song adaptations as its model, first in three voices with the usual figuration and then in four voices with no figuration. It is possible to emphasise the change in style by manual changes: bar 01–09/1 Blokwerk, bar 09/2–18 Positive and bar 19–end Blokwerk. The ambitus begins at C.

Kotter's Prooemium. Registrations:
Bar 1-9: Blokwerk (lower voices played one octave lower)
Bar 9/2-15: Doof + Positie
Bar 15-19: Blokwerk (right hand) and Doof + Positie (left hand)
Bar 19-End: Blokwerk (lower voices played one octave lower)
[sound file only available in the electronic version of this book]

play stop

Buxheimer Orgelbuch: Patrem omnipotentem

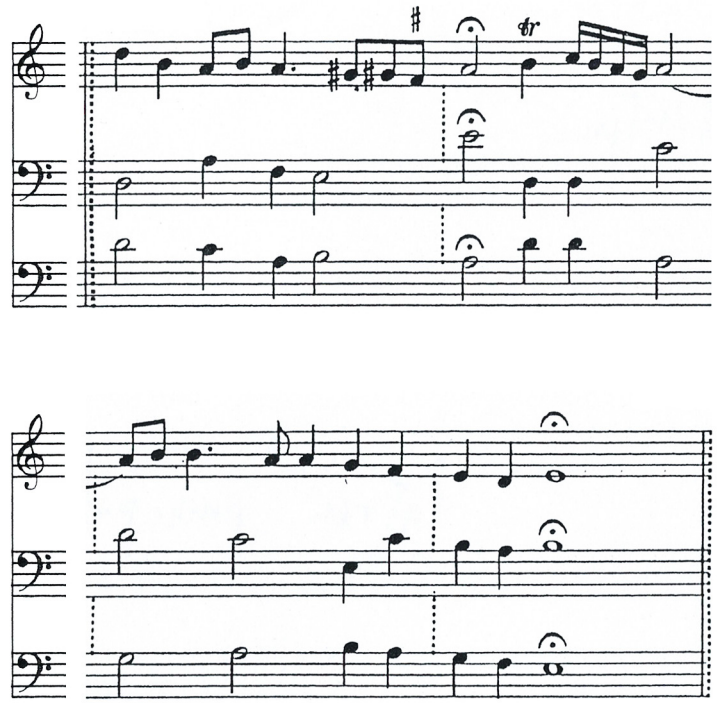
Type 5 / three voices

This liturgical piece was played to demonstrate Pythagorean tuning (according to Arnaut of Zwolle with the wolf between B and F sharp) on the appropriately tuned Trumpet of the Sauer organ at the Orgelpark; it was then analysed. In this tuning method, the fifths are perfectly tuned (apart from the extremely dissonant wolf interval on B-F#). The almost perfect agreement between the Pythagorean and syntonic commas (deviation of one schisma = 1.95 cents) results in practically pure major thirds over the finalis notes of the first church modes (D [Dorian], A [Hypodorian] and E [Phrygian]). This gives the cadences a distinctive tension in the sequence of the descending sixths (in two voices) or sixth chords (in three voices) in fauxbourdon style – with the excitingly enlarged "Pythagorean" thirds – up to the pure intervals of the final notes with pure fifths and thirds.

Patrem Omnipotentem. Registration:
Trompete 8', Manual I, Sauer Organ (1922)
[sound file only available in the electronic version of this book]

play stop

Buxheimer Orgelbuch: Patrem omnipontentem
(fragment; in the recording above from 0'50")



Winsum Tablature (1431; province Groningen): Wol up Ghesellen yst an der tyed

Type 8 / two voices

Registration: Trompete 8', Manual I, Sauer Organ (1922)

[sound file only available in the electronic version of this book]

play stop

Tablature Ludolf Bödeker (1445; Oldenburg): Credo

Type 1 / two voices

Both 'Wol up' from the Winsum Tablature and this 'Credo' were played on a Pythagorean-tuned Positive (built by Winold van der Putten) on 26 October 2013; Jankees Braaksma kindly allowed us to use it. This organ was not available at the Orgelpark when the recordings for this Report were made.

Registration: Trompete 8', Manual I, Sauer Organ (1922)

[sound file only available in the electronic version of this book]

play stop

Conrad Paumann (in the appendix to the Lochamer Liederbuch, dated 1457): Fundamentum organisandi

Type 2 / two voices

This *Fundamentum* by the blind master Conrad Paumann (1409-1473) is one of the most influential didactic works in the history of organ music. In the lower voice we hear a scale (c0–e1 and e1–c0) and in the upper voice melodic formulae in groups of 4 notes (ascending and descending tetrachords as well as rotating figuration patterns). Paumann's figuration models can still be found in the organ repertoire until the second half of the 16th century. Ambitus H-f2. The two blokwerks of the old Nicolaï organ of Utrecht permit a variety of possibilities ranging from playing on one manual in 16′ and 8′ pitch to playing with 2 manuals in 16′ and 8′ pitch.

'Ascensus simplex et descensus'; registration Doof + Positie

[sound file only available in the electronic version of this book]

play stop

'Ascensus simplex et descensus', played with the Doof alone

[sound file only available in the electronic version of this book]

play stop

Winsum Tablature (1431): Frysicum

Type 8 / two voices

Registration: Doof

[sound file only available in the electronic version of this book]

play stop

Buxheimer Orgelbuch (c. 1460): Redeuntes in mi

Type 3 / two and three voices

Registration: Blokwerk (lower voices played one octave lower)

[sound file only available in the electronic version of this book]

play stop

The same piece played at Rysum: Praestant, Octaaf, Mixtuur, church bell

[sound file only available in the electronic version of this book]

play stop

Josquin Desprez (c. 1450-1521): Duo

Type 11 / two voices

Registration: Doof + Positie + Cimbel (right hand); Blokwerk (left hand)

[sound file only available in the electronic version of this book]

play stop

Paul Hofhaimer: Ade mit Leid

Type 8 / three voices

Registration: Doof

[sound file only available in the electronic version of this book]

play stop

Heinrich Isaac: Innsbruck, ich muss dich lassen

Type 10 / four voices

Registration: Doof

[sound file only available in the electronic version of this book]

play stop

From Pierre Attaingnant's collection (published 1531): Magnificat quarti toni (5 verses)

Type 9 / two to four voices

This selection demonstrates the repertoire described below (§32), using a wide variety of registrations.

Versus 1 / *registration: Doof + Positie + Cimbel*

[sound file only available in the electronic version of this book]

play stop

Versus 2 / *registration: Doof + Positie (left hand), Blokwerk (right hand)*

[sound file only available in the electronic version of this book]

play stop

Versus 3 / *registration: Doof*

[sound file only available in the electronic version of this book]

play stop

Versus 4 / *registration: Doof + Positie + Cimbel (right hand), Blokwerk (left hand)*

[sound file only available in the electronic version of this book]

play stop

Versus 5 / *registration: Blokwerk*

[sound file only available in the electronic version of this book]

play stop

Excursus

The extant organ repertoire of the early 16th century, to which the comprehensive *Fundamentum* of Hans Buchner (a pupil of Hofhaimer) belongs, represents the art of organ playing from the Upper Rhine. It is very fortunate that such a substantial portfolio of organ music from the Upper Rhine area around Konstanz, Basel, Strasbourg and Heidelberg has survived to the present day. The lack of organ music sources of this period from the Middle and Lower Rhine, and the Netherlands, on the other hand, is regrettable and almost impossible to explain. The Rhine formed a contiguous

area of influence in the development of organ building and playing in the transition from the Middle Ages to early modern times.
In this context I would like to refer here for the first time to the findings of my research twenty years ago into the history of the organ in Alsace, where I examined the organ repertoire published by Pierre Attaingnant in Paris in 1531. The organ repertoire published by Attaingnant represents the style of the Upper Rhine organists with the melodic formulae described above in §30 (with ascending and descending tetrachords and rotating figuration patterns). This style probably can be traced back to one or more organists from Strasbourg who were forced to withdraw from the city around 1530 during the Reformation – similar to Hans Buchner who also lost his post as organist at Konstanz Cathedral due to the Reformation. Attaingnant was a shrewd music publisher who recognised the outstanding quality of the organ music which he published in 1531. At the same time, however, he realised that the success of his publication in Paris would not be enhanced by the German names of the composers from an area which was in the process of becoming Protestant.
The *Magnificat quarti toni* which was played as part of the program of 26 October in the Orgelpark Amsterdam is an example of the organ style which probably "set the tone" in the whole Rhine area as far south as the Netherlands. It is also the style which suits Jan van Covelens' and the Niehoff workshop's innovations in organ building. This is not French organ music; it is part of the Rhine's organ culture and probably the style of organ music which was influential for Sweelinck's father, whose family originated in an area under the ecclesiastical and cultural influence of Cologne.
One of the important elements of the late Gothic playing style was the use of the pedals. The *Buxheimer Orgelbuch* gives very detailed instructions on pedal use. The pedal blokwerk always sounded one octave lower than the manual blokwerk and therefore provided every note played in the pedal at 16' pitch. The organ in the Orgelpark has no pedal blokwerk and therefore needs a pedal coupler to the lowest octave of the manual blokwerk, which sounds at 16' pitch. This low sound can also be achieved through the bordunes, a seperate set of pipes which often were located outside the organ case. They had an one octave ambitus, sounding one octave lower than the lowest blokwerk rank. Another use of the pedals is described by Arnolt Schlick in his *Spiegel der Orgelmacher und Organisten* (1511): all the notes which cannot be reached in the manual were played on the pedals.[2]

The organ at the Orgelpark

The performance of late 15th century and early 16th century repertoire requires the following additions to the organ at the Orgelpark:

A pedal coupler to the Blokwerk

A pedal coupler to the Blokwerk can be achieved easily and simply by linking the existing pedal keys to the keys of the lower manual (using textile strips). A similar link was common in classical Italian organs until the 20th century. The position of the pedalboard on the reconstructed organ at the Orgelpark is ideal, because some strings would go towards the right, some would be straight or nearly straight and some would go towards the left.

The bordunes should sound one octave lower

The existing bordunes pipes could be used; it would be sufficient to add caps to the tops of the pipes in order to make them sound one octave lower. The free stop knob could be used to enable the bordunes to be switched on and off.

A pedal coupler to the upper manual

A pedal coupler to the upper manual is needed because this would enable the playing of individual notes or passages which cannot be reached in manual playing in contrapuntal movements, particularly when playing with the Doof.

Tuning

The provisional meantone temperament with its pure thirds was a good pragmatic decision. This makes it possible to achieve all the other relevant tunings without having to cut the pipes.

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2 1511; Chapter 2. Folio 2v./3r.

In Pythagorean tuning according to Arnaut of Zwolle, the notes f#, c#, g# and d# have the longest pipes (although d# may be omitted in practice as it was not used at that time). The notes f#, c# and g# require the longest pipes in the meantone temperament as well. This also applies to all the tuning methods used in the modifications of the Pythagorean and meantone tunings (for example, the tunings of Ramis de Pareia or Schlick).
On the basis of the existing tuning, all possible types of tuning can be experimentally tried out on the Van Straten organ using tuning slides. The number of tuning slides is relatively small due to the limited number of pipes. It does not take too long to alter the tuning and it is possible to record the same compositions in different tunings. A set of tuning slides makes it relatively straightforward to try out different tunings for the repertoire, to document them in recordings and to analyse them comprehensively.

Abstract

The construction of a replica of the oldest remaining organ in the Netherlands, located in the good acoustic setting in the Orgelpark Amsterdam, is one of the most important contemporary initiatives in European organ building. Combining the theoretical research undertaken thus far with performances on this unique organ has the potential to shed new light on our understanding of late medieval European organ culture. The *Magnificat quarti toni* from Pierre Attaingnant's collection from 1531 is an example of the organ style which probably "set the tone" in the whole Rhine area as far as the Netherlands. It is the style which suits Jan van Covelens' and the Niehoff workshop's innovations in organ building.

Several aspects of the organ at the Orgelpark might be changed, in order to learn more about this rich culture. It would benefit from coupling the pedal to the manuals, making the bourdons sound an octave lower by adding caps to the tops of the pipes, and applying tuning slides to the manual pipes in order to make tuning experiments possible.

Harald Vogel

Harald Vogel is an authority in the field of North German organ music. He established the North German Organ Academy in 1972 in order to convey authentic playing techniques on original organs. He has held a professorship at the Bremen University of Arts since 1994. As Director of Church Music in the Protestant Reformed Church until 2006, Harald Vogel was responsible for many historic organs in north-western Germany. As organ consultant he has supervised the restoration and building of many organs across the world. In 1981 he founded the Dollart Festival, the first bi-national organ festival in Europe, and in 1997 he established the Organeum in Weener as the centre of organ culture in East Frisia. Harald Vogel made many recordings, and is the author of influential books such as *Orgeln in Niedersachsen* ('Organs in Lower Saxony'). As an editor he has published new editions of the *Tabulatura nova* of Samuel Scheidt, the clavier works of Jan Pieterszoon Sweelinck and the organ works of Nicolaus Bruhns and Vincent Lübeck (Breitkopf) as „practical source editions". Together with Cornelius H. Edskes, he has furthermore co-authored *Arp Schnitger und sein Werk* ('Arp Schnitger and his work', Bremen 2009).
The Technical University in Luleå (Sweden) conferred an honorary doctorate on Harald Vogel in 2008 in recognition of his activity as consultant for the reconstruction of the seventeenth-century organ in the German Church in the old part of Stockholm. In 2014 he received another honorary doctorate from Oberlin College in Oberlin, Ohio (USA).

III

Manfred Novak - The Klagenfurt Tablature: On the Brink of the Renaissance

The mid-16th century Klagenfurt Organ Tablature[1] is certainly a rather late source in the frame of the symposium "The Medieval 'Van Straten Organ' at the Orgelpark as a Historical Document". But concerning intabulation technique it is the final result of a development which has its early traces in the late 15th century. Looking back in time may result in insights about possible interrelations between developments in intabulation technique and organ design.

The Klagenfurt Tablature is one of the earliest sources written in "New German Tablature"[2] and neither contains any hints on the time or place

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1 Kärntner Landesarchiv, MS GV 4/3. For a modern edition see *The Organ Tablature from Klagenfurt, ms. GV 4/3: Transcription, Commentary & Facsimile*, 3 vols., ed. Manfred Novak, Zabrze: ad artem musicae, 2009.

2 The earliest example of "New German Tablature" notation are tablature fragments from the hand of Albrecht Dürer dating circa 1520, cf. Manfred Hermann Schmid. "Dürer und die Musik". *Die Musikforschung* 46 (1993): 131–156 / Jean Michel Massing and Christian Meyer. "Autour de quelques essais musicaux inédits de Dürer". *Zeitschrift für Kunstgeschichte* 45 (1982): 248–255. I am grateful to Klaus Beckmann for having alerted me to the Dürer fragments. A letter from 1554, i.e. approximately the time when the Klagenfurt Tablature was written, transmits an intabulation of an anonymous motet in the new form of tablature notation. Cf. Cleveland Johnson. *Vocal Compositions in German Organ Tablatures 1550–1650. A Catalogue and Commentary* (2 vols.). New York–London: Garland Publishing, 1989, part I. Commentary, 114. Even earlier examples of pure letter notation lack an exact notation of rhythm for all of the parts: An anonymous *Ave maris stella* in three parts is included in a 15th-century manuscript (Österreichische Nationalbibliothek, Cod. 5094, fol. 155v). In this example the rhythm is reduced to a regular semibreve movement which is why no system of varied rhythmical notation

of its origin, nor on its scribe. It was first mentioned in 1848 in a catalogue of the "Historischer Verein für Kärnten".[3] Since 1904 it has been held by the then newly founded "Kärntner Landesarchiv". Judging from its contents and the palaeographic evidence it originated around the year 1560. Assumptions that it was written in one of the Carinthian monasteries which got disbanded under the reign of emperor Joseph II[4] do make good sense but hitherto cannot be confirmed by historical documents.

The tablature comprises 25 paper folios of 440 x 375 mm in size. The works are arranged according to their number of parts, starting with pieces in six parts, which are followed by pieces in five and finally those in four parts. The music is written into little boxes which correspond to "bars" of the duration of two semibreves each in duple metre and three semibreves each in triple metre. The grid formed by these boxes was drawn before the music was inserted. Empty pages can be found after the last piece in six parts and the last piece in five parts respectively. At these places some folios got cut out of the volume: Between folio 5 and 6 traces of three pages which got cut out remain, between folios 17 and 18 traces of four now missing pages.[5] The last folio of the manuscript is still completely filled with tablature notation. It contains the secunda pars of Josquin's *In principio*, however, due to the fact that the manuscript is a fragment, this piece is missing its last 32 bars.

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can be seen. Cf. Theodor Göllner. "Notationsfragmente aus einer Organistenwerkstatt des 15. Jahrhunderts". *Archiv für Musikwissenschaft* 24 (1967): 170–177, esp. 174–175. In *Musica Instrumentalis Deudsch* (1529) Martin Agricola transmits a piece notated in letters which, however, does not indicate the exact rhythm for all of its parts.

3 Gottlieb Freiherr von Ankershofen. "Handschriften der Sammlung des historischen Vereins für Kärnten in Klagenfurt". *Archiv zur Kunde österreichischer Geschichtsquellen* (AKÖG) I.2 (1848): 73ff. The Klagenfurt Tablature is included as number 72, and the compositions bearing an ascription to a composer are explicitly listed, contrary to those that were transmitted anonymously.

4 Rudolf Flotzinger. "St. Paul im Lavanttal". *Österreichisches Musiklexikon*, vol. 5. Wien: Verlag der Österreichischen Akademie der Wissenschaften, 2006. 2018f.

5 The *Cracow Organ Tablature* shows traces of pages which got cut out also; cf. Wyatt Marion Insko. *The Cracow Tablature*, 2 vols. Dissertation Indiana University, 1964. 8, footnote 1.

The Klagenfurt Tablature contains intabulations of nine motets, two mass settings and two chansons as well as two original organ works, all of which are ornamented:

- Preambulum. 6. vocum. Ludo: Senfel. [fol. 1r., 1 – fol. 2r., 1]
- Pater noster. 6. vocum. Josquin. [fol. 2r., 2 – fol. 5r., 2]
- Miserere mei deus. Josquin. 5. vocum. [fol. 6v., 1 – fol. 11r., 5]
- Stabat mater. 5. vocū. Josquin. [fol. 11v., 1 – fol. 13r., 5]
- Tua est potentia. 5. vocū. Josquin. [fol. 13v., 1 – fol. 14r., 3]
- Deprofundis. 5. vocū. Ludo. Senfl. [fol. 14r., 4 – fol. 16r., 3]
- Infirmitatem. 5. vo. verdeloth. [fol. 16v., 1 – fol. 17r., 2]
- Patrez omīpotētez. 4. vo: Petr de [la] Rue. [fol. 18r., 1 – fol. 19r., 4]
- Agnus dei. 4. vocum. Josquinus. [fol. 19v., 1 – fol. 20v., 1]
- Nisi dominus. Ludo: Senfl. 4. vocuz. [fol. 20v., 2 – fol. 21v., 4]
- Petre amas me. 4 vocū. [fol. 22r., 1 – fol. 22v., 3]
- Exercitatio bona [fol. 22v., 4 – fol. 23v., 4]
- Mille regretz. [fol. 23v., 5 – fol. 24r., 2]
- Le content. [fol. 24r., 3 – fol. 24r., 6]
- Inprincipio erat vm. Josquin. [fol. 24v., 1 – fol. 25v., 6]

The imitative style of the original works – an anonymously transmitted *Exercitatio bona* and Ludwig Senfl's *Preambulum* – and also the use of the same or similar ornamentation formulas as in the intabulations suggest that they could be arrangements of vocal music as well. Likewise, the erroneous copying of a phrase which got shifted by one bar in only one of the six parts of *Preambulum* hints at a possible vocal model which, however, hitherto could not be identified.[6]

The high percentage of compositions by Josquin – about two fifths of the total number of pieces – is striking and unique among German organ tablatures. The leading position of Josquin seems to put the Klagenfurt Tablature in the vicinity of the phenomenon of the German Josquin Renaissance, and the manuscript actually shows a considerable number of

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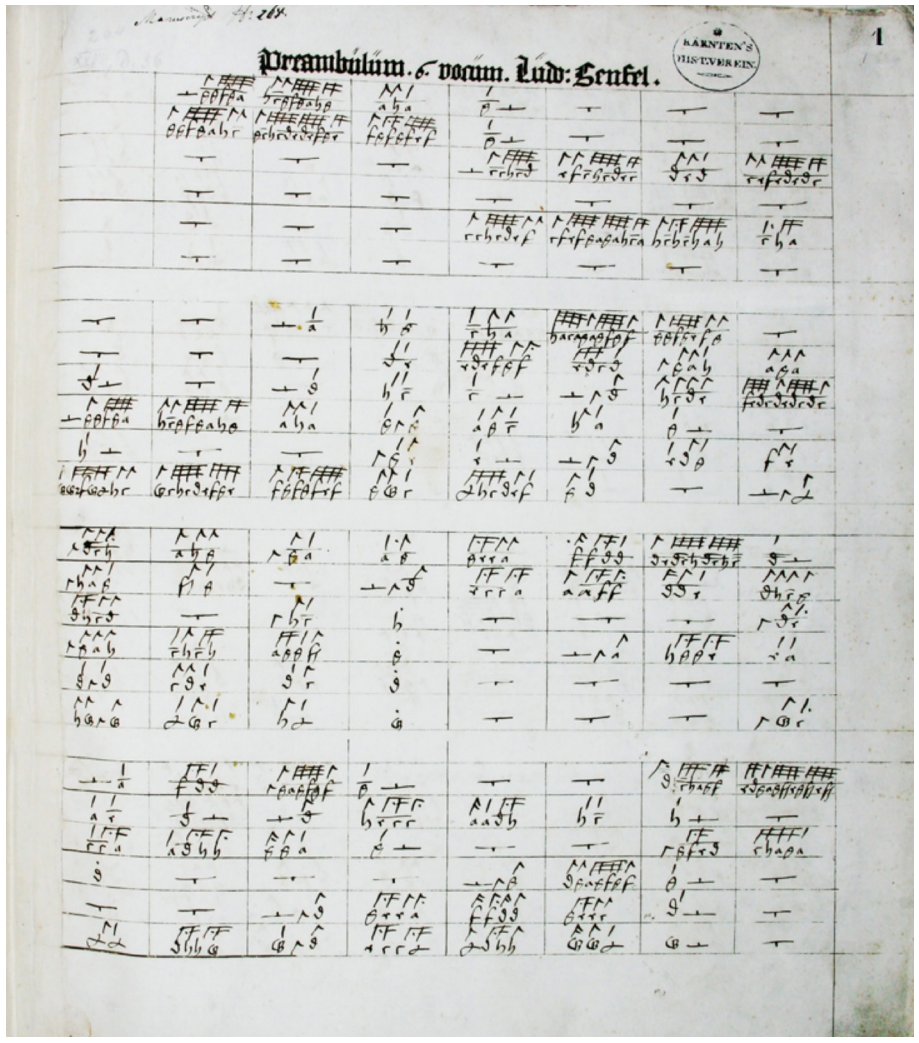
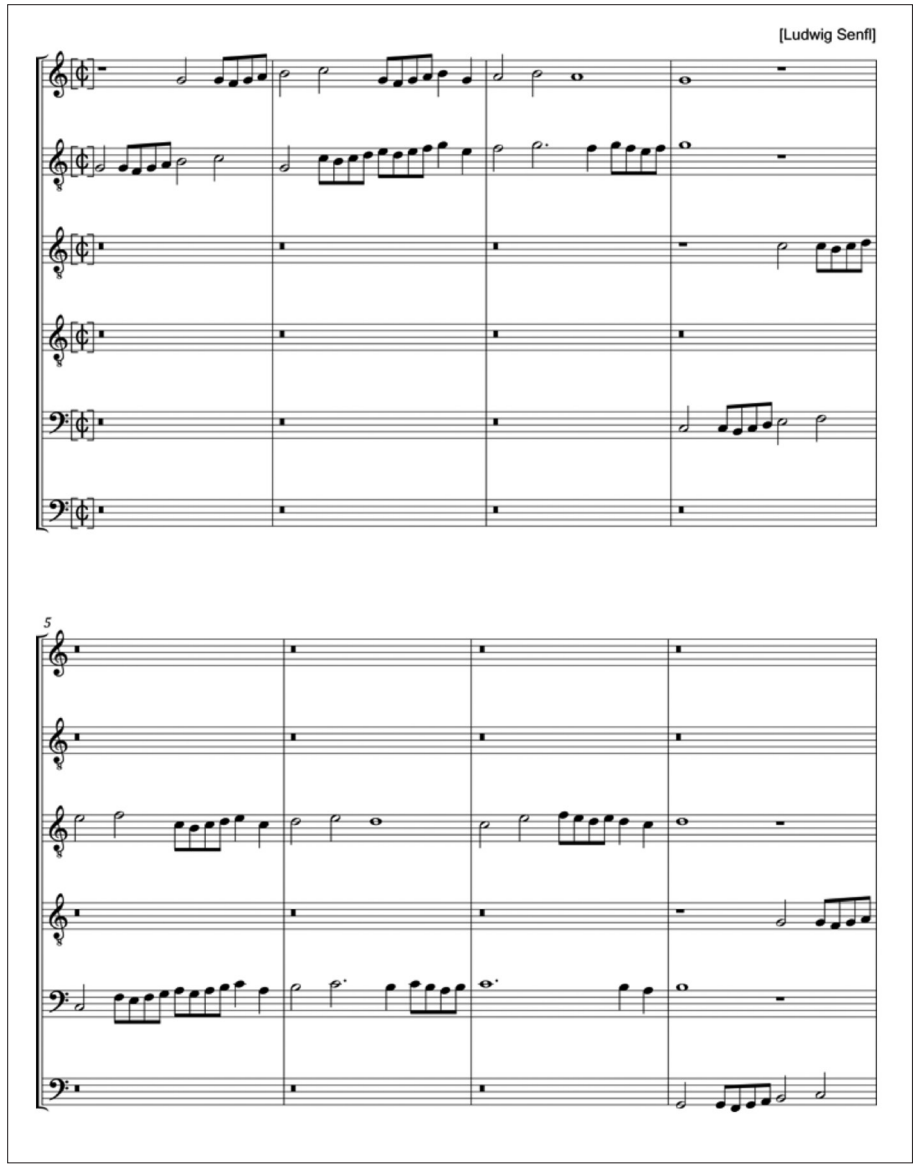
6 In the fourth part bars 22 to 25 were erroneously written as bars 21 to 24.

The Klagenfurt Tablature

A facsimile of Ludo Senfl[e]l's Preambulum and part of its transcription, both published in Manfred Novak, ed. The Organ Tablature from Klagenfurt, ms. GV 4/3: Transcription, Commentary & Facsimile *(3 vols). Zabrze: ad artem musicae, 2009.*



concordances with two anthologies which helped initiate this renaissance and in which Josquin is the most prominent composer: the two prints by Hieronymus Formschneider *Novum et insigne opus musicum* (Frankfurt/



Main, 1537; RISM 1537/1) and *Secundus tomus novi operis musici* (Nuremberg, 1538; RISM 1538/3).[7] The two volumes contain 7 out of 13 pieces which are

7 Concerning the two Formschneider prints and the German Josquin Renaissance cf. Stephanie P. Schlagel. "The Liber selectarum cantionum and the 'German Josquin Renaissance'". *The Journal of Musicology* 19/4 (Autumn 2002): 564–615, here 590–597.

intabulated in the Klagenfurt Tablature. The inclusion of comparatively many works by Senfl and the arrangement of the pieces according to the number of parts, starting with pieces with the highest number of parts, are further similarities between the prints and the tablature. Thus, Cleveland Johnson lists the two prints by Formschneider as vocal sources in his catalogue *Vocal Compositions in German Organ Tablatures* 1550-1650.[8] Additionally, the anthology *Secunda pars magni operis musici* printed by Berg & Neuber (Nuremberg, 1559; RISM 1559/1) can be suggested as another possible model for the intabulator. It contains four of the intabulated works and adds another concordant piece, *Tua est potentia*, which is not included in the Formschneider collections.

Concordances KlagL 4/3 with RISM 1537/1, 1538/3 and 1559/1

1537/1 = Novum et insigne opus musicum, Formschneider, Frankfurt/Main 1537
1538/3 = Secundus tomus novi operis musici, Formschneider, Nürnberg 1538
1559/1 = Secunda pars magnum operis musici, Berg & Neuber, Nürnberg 1559

Pater noster	1537/1		
Miserere mei Deus	1537/1		1559/1
Stabat mater		1538/3	1559/1
Tua est potentia			1559/1
De profundis	1537/1		
Infirmitatem nostram		1538/3	1559/1
Nisi Dominus	1537/1		
In principio		1538/3	

It is questionable, though, whether at least one of these prints actually was the model for the anonymous intabulator of the Klagenfurt manuscript. The rhythmic differences are too numerous and partly too obvious for being rated insignificant given the fact that the intabulator did not attempt to adapt the

8 Johnson: cf. note 2.

music to keyboard performance but strictly adhered to the polyphonic part writing, and declamation of the text can be ruled out as a possible reason for adjustments of the rhythm. In addition to errors characteristic for intabulations such as going wrong by an octave or a third, true pitch variants can be found in 16 occasions.[9] Furthermore, *Nisi dominus* is included as a piece in four parts in the Klagenfurt Tablature while *Novum et insigne opus musicum* transmits the version in five parts, and *Tua est potentia* is transposed a whole tone step up in the Carinthian manuscript when compared to the printed version of *Secunda pars magni operis musici*.[10] Both procedures – reduction of parts and transposition – would be isolated cases in the Klagenfurt Tablature.

Although the tablature contains some of the most popular 16th-century compositions it makes a valuable contribution to keyboard repertoire because there are hardly any concordances with other German tablatures. Only *Stabat Mater* and *Le content* are also intabulated in the Lublin tablature (1537-1548),[11] the latter also being found in manuscript 4778 of the Bayrische Staatsbibliothek in Munich (from the beginning of the 17th century).[12] Other than that, *De profundis* is included in the printed tablature by Johannes Rühling,[13] and an intabulation of *In principio* was contained in the now lost manuscript 6 of Stadtbibliothek Wroclaw.[14] Even by expanding the source group to 16th-century tablatures of non-German provenance only two other

9 These occasions are: *Miserere, secunda pars*, bars 20-21 and 72; *Miserere, tertia pars*, bar 120; *Stabat mater, prima pars*, bar 13, *secunda pars*, bar 10 (errors in the prints); *Tua est potentia,* bars 32, 45 and 69 (in two parts); *De profundis, prima pars*, bar 53, *secunda pars*, bar 39; *Nisi dominus, prima pars*, bars 68-70, *secunda pars*, bars 35 (concerning the three lower parts) and 50; *In principio, prima pars*, bars 15 and 43, *secunda pars*, bar 16.

10 For a more detailed comparison of the sources of *Tua est potentia* and for a discussion of its transposition cf. Manfred Novak, ed. *The Organ Tablature from Klagenfurt, ms. GV 4/3: Transcription, Commentary & Facsimile* (3 vols.). Zabrze: ad artem musicae, 2009, vol. 1, 39–42.

11 KrakPAN 1716.

12 MunBS 4778.

13 *Tabulaturbuch auff Orgeln und Instrument*, Leipzig, 1583 (RISM 1583/24).

14 WrocS 6.

concordant works can be added:[15] *Ave Maria*, the secunda pars of *Pater noster*, and *Agnus Dei* (Agnus III from Josquin's *Missa "L'homme armé" super voces musicales*) are also included in the Cabezon tablature,[16] as is *Stabat mater*, the prima pars of which is intabulated in two different versions there.

Concordances of KlagL 4/3
with other organ tablatures until ca. 1600

Secunda pars Ave Maria					5		
Stabat mater	1				5		
De profundis			3				
Agnus Dei					5		
Le content	1	2				6	7
In principio				4			

1 = KrakPan 1716 (Lublin-Tablature, 1537-1548)
2 = MunBS 4778
3 = RISM 1583/24 (Tabulaturbuch des Johannes Rühling, Leipzig 1583)
4 = WrocS 6
5 = RISM 1578/24 (Obras de musica para tecla[17])
6 = Brown 1531/3
7 = Brown 1549/6

Thus the Klagenfurt Tablature contains, for instance, the only known keyboard arrangement of Josquin's popular Chanson *Mille regretz*. Four

15 In this case the concordances of *Le content* are increased by Brown 1531/3 and 1549/6. Cf. Howard Mayer Brown. *Instrumental Music printed before 1600: a Bibliography*. Cambridge (MA): Harvard University Press, 1965.

16 *Obras de musica para tecla, arpa y vihuela de Antonio de Cabeçon* [...]. Madrid, 1578 (=RISM 1578/24).

17 See previous note.

pieces transmitted in the manuscript are *unica* altogether: both of the original organ works as well as *Patrem omnipotentem*, whose ascription to Pierre de la Rue is highly questionable,[18] and finally, *Petre amas me*.[19]
Even though the Klagenfurt Tablature seems a bit old-fashioned in view of the included composers, concerning intabulation technique it takes a very modern approach: to the best of my knowledge, it is the first source of intabulations which entirely and strictly adheres to its vocal models, notwithstanding the added ornamentation. Its scribe does not remove or add any parts of the vocal models and does not avoid unisons or crossings of parts. This procedure is the one usually found in the famous tablature prints from the last third of the 16th century and differs from tablature sources of the first half of the century. Also the inclusion of a considerable number of pieces in five or six parts is a later development which was uncommon with earlier tablatures.[20] The motet intabulations of the Lublin tablature, for instance, comprise mainly four part pieces. Five part pieces make for only 29% among the intabulated motets there. In the Klagenfurt Tablature the five and six part works make for almost half of the music, with

18 For a detailed discussion of the question of ascription to Pierre de la Rue: cf. note 10, here 44.

19 The preceding paragraphs are basically translated excerpts taken from a paper published in German: Manfred Novak. "Die Klagenfurter Orgeltabulatur KlagL 4/3: In Österreich überlieferte Orgelmusik des 16. Jahrhunderts". *Wissenschaftliches Jahrbuch der Tiroler Landesmuseen* 2012. Innsbruck: Tiroler Landesmuseen, 2012. 78–89, here 80–83.

20 Earlier intabulations such as from the Buxheim organ book and the tablatures by Leonhard Kleber, Bonifacius Amerbach, Hans Buchner or Jan z Lublina often reduce the texture of their models to a smaller number of parts, a procedure which facilitates the execution of ornaments and avoids unisons. In other instances they increase the number of parts for greater sonority on the instrument. During the 15th century the most common number of parts of intabulations was increased to three, intabulations comprising four parts were a rare exception. During the first decades of the 16th century the standard three part texture was gradually expanded to four parts. Occasionally one finds pieces in more than four parts as exceptions: Both Kleber's and Buchner's tablatures include three pieces in five, the latter additionally transmits even one piece in six parts.

the remaining compositions being in four parts.[21] Of course, multiple parts are more difficult to play on a keyboard instrument than to perform with an ensemble of singers. But what is it that enabled keyboard players to perform and thus allowed intabulators to transcribe and adapt such compositions in the middle of the 16th century, but that they could not yet draw on in the first half of the century, when they used to reduce the texture of their vocal models to three parts? Was it just different priorities musicians had on the keyboard, and did those priorites change around 1550? Why do we see a delay in the tendency to increase the number of parts in comparison with vocal music,[22] and likewise a similar delay concerning the interest in accurate part-writing? Arnolt Schlick's testimony of performing music in seven or even ten parts on the organ has to be considered a rare exception due to the lack of other sources supporting his statements.[23] But it is noteworthy that Schlick was also one of the first musicians to transmit a strong preference for accurate part-writing on the keyboard.[24] In fact, we see a parallel development of these two phenomena - increasing the number of parts and accurate part-writing -, finding their manifestation in the Klagenfurt Tablature around 1560. How do these phenomena relate to the design of the organ?

21 As the Klagenfurt tablature is a fragment we cannot know how many folios or pieces got lost. The four part pieces are included in the last part of the manuscript, of which some folios in the end definitely went missing. However, as also in middle of the manuscript folios were cut out, a loss of pieces in five and six parts must be considered as a possibility, too.

22 In Jean de Ockeghem's sacred music we already find compositions for five parts, and Josquin even wrote a number of works in six parts, just to mention the two most famous names of the period. One generation later, Gombert preferred thicker-than-four-part textures and wrote pieces for seven or more voices.

23 Schlick's organ composition *Ascendo ad patrem meum* is written in ten parts. For the quotation of his statements cf. footnote 50.

24 A stronger concern for meticulous part writing can be observed in cantus firmus-compositions, as several fundamenta and works by other distinguished masters (such as Paul Hofhaimer, +1537) show, but cf. the quotation in footnote 50, where Schlick is apparently referring to intabulations.

A possible connection to the decreasing width of keys and the octave span on keyboard instruments seems natural. This change allows players to stretch larger intervals and perform ornaments more easily, even if they are to play a second part with the same hand.[25] Thus it supports playing polyphony in multiple parts on the organ. There is no doubt about the fact that the general development from the 15th to the 18th century was a decrease of the octave span. But was this development already advanced enough in the middle of the 16th century to make a considerable difference for playing techniques on the keyboard? Apparently, according to Naotaka Sakai, so far there is no study of the octave span,[26] descriptions of instruments rarely reveal their octave span, and scattered data which can be collected from a few papers complicate an accurate comparison because of their varying measuring methods.[27] In order to be able to compare scarcely available data some of these measurements had to be converted to an octave span, which is the width from the left side of a c-key to the right side of the next b-key, and inaccuracies resulting from this process had to be accepted. Nevertheless, to simply show a broader perspective the collected data is certainly good enough.[28]

25 In 1583 Jacob Paix describes how this was done: "Dann so man mit dem Daum an der rechten hand auch haltet / wirt die Coloratur mit dem hindern und kleinen finger leichtlich gefürt: Dessgleichen auch mit der lincken hand geschehen kann." Cf. *Ein Schön Nutz unnd Gebreüchlich Orgel Tabulaturbuch* (1583), folio 4r, quoted after Wilhelm Merian, *Der Tanz in den deutschen Tabulaturbüchern* (1927), rpt. Hildesheim: Georg Olms, 1968. 115.

26 Cf. Naotaka Sakai. "Keyboard Span in Old Musical Instruments: Concering Hand Span and Overuse Problems in Pianists." *Medical Problems of Performing Artists* 23/4 (2008): 169–171, 171. For his study Sakai measured 120 keyboard instruments from 1559 to 1929 from the following instrument collections: Metropolitan Museum of Art in New York, Hofburg Collection of Early Musical Instruments in Vienna, Technisches Museum Wien in Vienna and the Hamamatsu Museum of Musical Instruments in Hamamatsu, Japan.

27 Differing methods include measuring the octave span being defined as the width of seven naturals or as the width of eight naturals, measuring the stichmaß (21 naturals) or, occasionally, the width of single naturals.

28 For the discussion of playing technique in connection with keyboard design, the octave span

It was inferred from Michael Praetorius' statements in his second volume of *Syntagma musicum*, *De organographia*,[29] that in early organs the single naturals could have been as wide as 60[30] to 80[31] mm. The range of interpretation shows the ambiguity of the information provided by Praetorius.[32] The possibly earliest extant 15th-century keyboard, from a clavicytherium from 1480, shows an octave span of 176 mm,[33] which fits the approximate 180 mm that are seen as common during the 15th century.[34] This is about the same range that *Encyclopedia Britannica* gives as the maximum which has ever existed for stringed keyboard instruments.[35]

During the 16th century the octave span narrows to about the size of the modern piano, which is 165 mm. Two harpsichords dating from 1559 and 1600 measured by Naotaka Sakai show octave spans of 164.5 mm,[36] but pipe instruments seemed to have rather wider keys: The Ebert organ from 1561 in the Hofkirche Innsbruck has 171 mm,[37] the 16th-century choir organ in the Nieuwe Kerk in Amsterdam has 170 mm,[38] the Van Covelens organ from 1511 in the Grote Sint Laurenskerk in Alkmaar has 168 mm,[39] and a claviorganum built by Josua Pock in 1591 has 168 mm as well.[40] Data from clavichords support this broad development. The five extant instruments of the 16th century have octave spans between 158.3 mm and 168.7 mm, while the width of the individual naturals of the iconographical evidence of the Urbino clavichord from 1479 is calculated to 26 mm, which would result in an octave span of ca. 190 mm.[41] The difference between an octave span of 190 mm at the end of the 15th century and approximately 170 mm during the 16th century coincides with Praetorius' description of organ keyboards built between 1475 and 1499 whose octave spans were one key wider than what was common at Praetorius' time.[42] Also Arnolt Schlick testifies to a narrowing keyboard span when he recommends that the natural keys "must not be too

is certainly not the only decisive parameter, but the length of keys or the width of upper keys and their distance from each other also play a crucial role. As these measurements are even more scarcely documented and thus more difficult to obtain, in this article the discussion of keyboard design is limited to the octave span.

29 *Michaelis Praetorii C. tomus secundus: De organographia*, Wolfenbüttel, 1618 (second edition 1619).

30 Peter Williams and Barbara Owen, *The Organ. New Grove Series, The Music Instrumental Series*. London: W. W. Norton & Company Ltd., 1998. 69.

31 Nicolas Meeùs. "Keyboard." Grove Music Online, accessed August 27, 2013.

32 "Jedoch also / das ein Clavis baldt 2 ½ Zoll/das ist drey guter Finger breit/und also noch einmahl so groß/als einer der jtzigen unsern / gewesen;" Cf. Michael Praetorius. *Syntagma Musicum*, vol. II, ed. Arno Fochert, facsimile-reprint of the edition Wolfenbüttel 1619, Kassel: Bärenreiter, 2001, 109.

33 Strange, Thomas. "Re-creating the Clavisimbalum of the Minden Cathedral Altarpiece." http://www.squarepianotech.com/wp-content/uploads/2012/04/minden-altar-1.1.pdf. Accessed April 10, 2013, 8.

34 Meeùs: cf. note 31.

35 Lemma „Keyboard instruments" on http://www.britannica.com. Accessed April 11, 2013. In this article a value of 178 mm is quoted.

36 Sakai: cf. note 26. Here 169. Sakai measured 188 mm for the width of eight naturals.

37 Telephone conversation with Reinhard Jaud, April 12, 2013. The keyboard of the Ebert organ is not original but was reconstructed by Jürgen Ahrend according to the measures of the original roller-board.

38 Cf. Koos van de Linde. "Nogmaals het Van Straten-orgel: Een afwijkende mening." *Het Orgel* 109/3 (2013): 22–29, here 24, footnote 10.

39 Pieter van Dijk measured the octave span of the Bovenwerk which is presumably the original keyboard built by Van Covelens and emailed his results to the author on May 11, 2013. Koos van de Linde quotes 170 mm for the Van Covelens organ, cf. previous note.

40 Peter Kukelka. "Die Restaurierung eines Claviorganums des Josua Pock von 1591 aus Innsbruck". Walter Salmen, ed., *Orgel und Orgelspiel des 16. Jahrhunderts*. Neu-Rum bei Innsbruck: Helbling, 1978. 153–163, here 154.

41 Bernard Brauchli. *The Clavichord*. Cambridge: Cambridge University Press, 1998. 29 and 61–70.

42 "Und in diesen jetztgedachten Orgeln seynd die ManualClavir den unserigen jtzigen fast an allem gleich gewesen: […] nur das sie etwas und fast eines Clavis grösser und weiter in den Octaven getheilet worden […]". Cf. Michael Praetorius: cf. note 32. Here 112. Praetorius also mentions an organ built in 1475 in Bamberg whose keys were made smaller only 18 years after it had been built, cf. Michael Praetorius, *Syntagma Musicum*, vol. II, 111.

wide or have such broad keys as the ones made before our time."[43] His own measurements, which he provided in the *Spiegel der Orgelmacher und Organisten* (Mainz, 1511), are unfortunately not unambiguous as he did not specify the term "octaff," for which they are valid, any closer. On the other hand, Schlick also informs us about considerably narrower keyboard spans when he warns against too narrow keys "as are found on some instruments, as if children should play on them."[44] A study in the relation of the width of keys and keyboard technique published by Rhonda and Robin Boyle reveals a number of advantages of narrower keyboard sizes, indeed, with the more comfortable stretching of octaves and perfomance of chords, especially octave based 4-note chords, being two of the most noticeable, especially for players with small hands.[45] In the context of playing intabulations these advantages are especially significant. Having rather large hands, the author can tell from personal experience that the rather wide octave span of the Ebert organ is perfectly suited to perform the five- and six-part pieces of the Klagenfurt Tablature.[46] The even wider keys that

43 "[…] vnd nit zü weit / oder so breyt claues als die alten vor zeitten gemacht habē […]". Quotations in both languages after Arnolt Schlick, *Spiegel der Orgelmacher und Organisten*, ed. Elizabeth Berry Barber. Buren: Frits Knuf, 1980. 39.

44 "[…] oder auch so eng vn schmall wie dan in etlichen werken funden werdē / als solten kinder dar vff spiln […]". Quotations in both languages after Arnolt Schlick, *Spiegel der Orgelmacher und Organisten*; cf. previous note.

45 Cf. Rhonda Boyle and Robin G. Boyle. *Hand Size and the Piano Keyboard: Technical and Musical Benefits for Pianists Using Reduced-Size Keyboards*. (http://www.appca.com.au/proceedings/2009/part_1/Boyle_Rhonda_Boyle_Robin.pdf, accessed June 4, 2013.) As the article deals with problems of pianists with small hands, and due to the fact that average sized people in the 15th and 16th centuries were smaller than today, it seems especially relevant. However, the authors write about experiments with a 7/8 keyboard, which is even narrower than average 16th-century keyboards. Thus the problems which small handed performers face on the modern keyboard would be the same as on a 16th-century organ keyboard. The wider 15th-century keyboard however should be even more troublesome regarding the execution of octaves and chords, the necessity of which increases with thicker polyphonic textures.

46 The complete Klagenfurt Tablature was recorded by the author on the Ebert organ in 2011

were common in the 15th century may have caused troubles for the technical execution of polyphony in multiple parts. Lacking an extensive sample of extant early organ keyboards, replicas such as the Van Straten organ play an important role in allowing for practical experiments. However, the discussion about the width of the original octave span of the Gerritsz organ with various suggestions between 170 and 190 mm reveals the difficulties in reconstructing the correct measurements for this particular organ as well as for reconstructing lost keyboard measurements in general.[47] When playing some thick textures of the Klagenfurt Tablature on the Ebert organ the use of the pedals made it unnecessary to stretch more than an octave, an interval which could still be playable even on the mentioned wider keys. Of course, this depends on the performer's hand size: A difference of about 24 mm in hand or octave span lets a player stretch one natural more or less.[48] Even if the difference between 15th- and 16th-century keyboards does not seem to have been that significant,[49] the data collected by Rhonda and Robin Boyle show that small handed keyboard players (a majority of females, who on the average have smaller hands than males) would have troubles stretching a ninth on a modern keyboard, which corresponds to an octave of approximately 189 mm octave span. This figure comes very close to the presumed 190 mm of the Urbino clavichord and to Praetorius' statements indicating that late 15th-century organ keyboards had been one natural wider.

Thus, while the narrowing of the keyboard assumingly was a contributing factor, the development of the pedal board and the use of the pedals were probably even more important in enabling organists to play thick polyphonic textures. This is explicitly stated by Arnolt Schlick in 1511,[50] but it was only

(Klagenfurter Orgeltabulatur – 2 CDs, MDG 606 1701-2).

47 Cf. note 38. Here 23–24.

48 Cf. note 45. Here 4.

49 Still in the 18th century, when the octave span was generally the smallest, pipe instruments seemed to have a larger octave span than stringed keyboard instruments: An original mid-18th-century Neapolitan organ nowadays in use in the Catholic parish church of Salvator am Wienerfeld, Vienna, Austria, shows an octave span of 168 mm.

50 "Playing only on the manuals has been standard practice outside the German countries up to

half a century later that pieces in five and six parts were included in sources of keyboard music not only as isolated cases. Schlick advocated an independent pedal with a compass of F-c1,[51] which is exactly the compass needed for playing the specified pedal parts of the tablature books by Kleber and Buchner.[52] These two sources are especially useful for investigating the use of the pedal, as they specify manualiter or pedaliter execution of the pieces contained therein. That indeed the pedal is the decisive factor for the increase in the number of parts can be seen from the fact that among the manualiter pieces three-part textures prevail by far, while the pedaliter section of the Kleber tablature contains three and four-part pieces in approximately even ratio and even includes three pieces in five parts. The same holds true for Buchner to an even stronger extent: Among the pedaliter pieces we find almost twice as many pieces in four parts compared to the number of pieces in three parts, again three pieces in five parts and one even in six parts. Here the feet take an equal part in the polyphony, and the pedal board must have been designed in a way that allows for playing frequent quavers and even occasional ornaments in semiquavers. Crossings of parts and unisons confirm a heightened awareness of part-writing and suggest that the pedal should be registered at the same pitch as the manual in order to avoid wrong inversions.[53] Threre is yet another indication that a generous use of the pedal went hand in hand with a heightened awareness of part-writing: In Kleber's tablature three pieces are included in different arrangements in both the manualiter and the pedaliter sections.[54] While crossings of parts hardly occur in the manualiter versions, they are commonplace in the pedaliter intabulations.

The evidence provided by Kleber, however, is not as unambiguous as one would wish for: In two manualiter pieces it is necessary to stretch a tenth.[55] However, another source corroborates the assumed connection between the use of the pedal and meticulous part-writing: In the Lublin tablature the four-part motet *Domine secundum actus nostros noli nos iudicare* got intabulated twice, both as a manualiter and as a pedaliter version. Only the pedaliter version keeps all the crossings, unisons and tied notes of its model while the manualiter arrangement eliminates these and makes use of rests instead for an easier execution of ornaments.

now, but now they are studying the pedals as well, and not without reason, for with the hands alone it is impossible to play every piece containing many parts correctly and with the parts in proper relation. But if one has the pedal to help, taking two or three voices, and also four in the manual, this makes seven parts altogether, which is impossible on the manuals without the pedal. Not only polyphony, but also many smaller songs and other pieces with three or four parts, cannot be played perfectly on the manuals, as is the case when parts go too far from each other, so that one voice must give way to another or be silent at times altogether because one cannot reach it with the hands. Also sometimes the voices come too close together, so that they coincide, as at a cadence. This may be done perfectly, and each part may better have its own tone and be heard, if the pedal and manual are used together." Quoted after Barber: cf. note 43. Here 29–31.

51 Cf. note 50. Here 43.

52 Leonhard Kleber: Staatsbibliothek Preußischer Kulturbesitz Berlin/West, Musikabteilung, Signatur Mus. ms. 40 026 (1520-1524); Hans Buchner, *Fundamentum organisandi*: Handschrift Basel FI 8a (not before 1524). In those two sources the most usual top note of the pedal part is b flat, with c1 only occuring once in the Kleber tablature and not occuring at all in the Buchner tablature. The fact that F was the bottom note is confirmed by the closing bass line of Nr. 105 (A-G-F-e) of the Kleber tablature, which had to leap up a seventh due to the missing E.

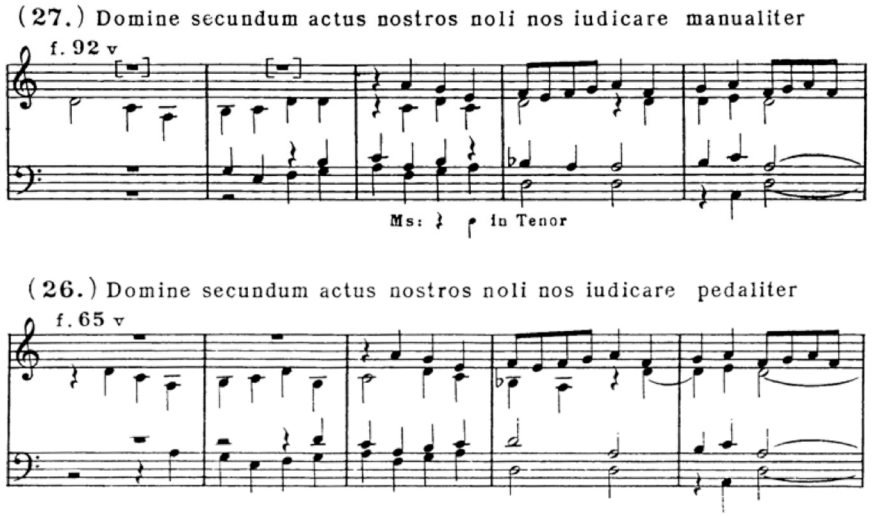
53 An exception is *Ach hilf mich laid* in la (Kleber nr. 104), bar 42, where a 4-6 chord could be avoided by registering the pedal one octave lower than the manual.

54 These pieces are *Zucht eer und lob* (nr. 46 and 93), *Ach hilf mich laid* (nr. 5, 65 and 104) and *Ain frewlich wesen* (nr. 19, 20, 51 and 73).

55 Of special interest is *Tandernack*, which appears in two different versions (nr. 28 and nr. 35) in Kleber's tablature book, both of which are included in the manualiter section. In bar 62 stretching a tenth is necessary for the version nr. 28 but is avoided for the variant nr. 35 by shortening one of the notes that form the interval. Possibly we see a common performance tradition actually being notated here.

Lublin Tablature

In the first example, crossings, unisons and ties were eliminated. In the second one, they were kept. Excerpt reproduced from Corpus of Early Keyboard Music *6/3, ed. John R. White, [Middleton]: American Institute of Musicology, 1966. 75 resp. 74.*



It would easily be possible to play the pedaliter version on the manual only, though at the cost of losing audible unisons and thus clearer part-writing. The same difference in approach to intabulation technique can be observed when comparing the arrangements of Josquin's *Stabat mater* in the Lublin and the Klagenfurt Tablature. While the Klagenfurt Tablature accurately transcribes the part-writing of the motet, the version of the Lublin tablature eliminates crossings and, occasionally, also parts for easy playability, considerably shortens some note values for the same reason and avoids unisons even when the entrance of a part gets lost due to this procedure. In none of the intabulations the use of the pedal is specified, though.
It is interesting to note that in the 16th century two quite different approaches to pedal design are eventually capable of serving the same purpose: Both the expansion of an independent pedal with a considerable compass – as advocated by Schlick – and a simple pulldown pedal help the

player to spread large intervals and therefore facilitate the performance of polyphony in many parts. A pulldown pedal would not help in performing audible unisons but – just like pedal couplers or pedal transmissions – provides for a homogenous sound quality.
At the brink of the Renaissance we find a heightened desire of playing multiple parts and a strong concern for meticulous part-writing on the organ which go hand in hand with the development of pedal design and playing and find their full manifestations in the intabulation technique of the Klagenfurt Tablature. Although this manuscript does not transmit any explicit pedal indications, five pieces contained therein, all of which are written in five or six parts, cannot be played without resorting to pedal playing.[56] Given the fact that all three of the six part pieces contained in this manuscript cannot be executed without this technique, the Klagenfurt Tablature clearly underlines the correlation of pedal playing and playing of thicker textures on the organ. The pedal of the Van Straten organ with its bourdonnen does not provide a sufficiently large compass for playing entire bass lines. As it plays different pipes than the manuals, it does not provide a homogenous sound quality either, and thus reflects a different tradition of pedal usage. In contrast, around 1500 intabulations start to require the technically more challenging playing of an individually and independently moving pedal part within a polyphonic texture, early traces of which can be found in some works of the Buxheim organ book.[57] Thus it can be suggested that at the brink of the Renaissance the practice of intabulating at the organ coincides with the development of pedal design and pedal playing.

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56 These pieces are all of the works written in six parts (*Preambulum, Pater noster, Secunda pars. Ave Maria*), the prima pars of *De profundis* and the secunda pars of *Stabat mater*.

57 The intabulation of Dufay's chanson *Se la face ay pale* may serve as an example: The contratenor was altered so that it always is the lowest part of the intabulation. In contrast to the superius and the tenor it is free from quickly moving ornaments and thus is suitable for performance on the pedals (although there is no explicit pedal indication). In case of a performance without pedals the player would have to stretch at least a ninth in bars 3 and 6, places in which the composition additionally demands the execution of ornaments.

Abstract

The Klagenfurt organ tablature (KlagL 4/3) is estimated to have been written in approximately 1560. Given this date of origin, it is certainly a rather late source in the course of the symposium gathered around the Van Straten organ, a reconstruction of the medieval Gerritsz organ from 1479. Concerning intabulation technique, however, it is the final result of a development having its early traces in the late 15th century, and being interrelated with developments in organ design.

The Klagenfurt tablature is a manuscript source without any hints as to its scribe or its date or place of origin. It transmits intabulations of four-to-six-part-motets, chansons and mass settings, plus two original keyboard compositions. All of the works are ornamented. The compositions largely come from Josquin Desprez and Ludwig Senfl.

In view of the chosen composers, the Klagenfurt tablature seems a bit old-fashioned, concerning intabulation technique, however, it shows a very modern approach: to the best of the author's knowledge, it is the earliest source of intabulations which entirely and strictly adheres to its vocal models, notwithstanding the added ornamentation. The intabulator does not remove any parts from the models or add any to them; neither does he avoid unisons or crossings of parts. Similarly, the inclusion of a considerable number of pieces in five or six parts is rather a novelty for that time.

The increasing number of parts goes together with a heightened interest in accurate part-writing even in intabulations. Both phenomena have their early traces around 1500 and find their full manifestation in the Klagenfurt tablature. They imply new demands with regard to playing techniques (more three- and four-note-chords, stretching of wider intervals) which coincide with two developments in organ design: a narrowing of the octave span and, more importantly, the expansion of the pedal board to either an independent division suitable for more extensive and demanding pedal playing, or to a substantial playing aid (pulldown pedal, couplers, transmissions).

Manfred Novak

Manfred Novak works as organist and choir director at the Benedictine monastery of St. Lambrecht in Austria. He is active as a performer (organ recitals in various European countries) and composer. As a researcher he has edited two books, lectured at international conferences and universities, and has published on topics of liturgical music after the Second Vatican Council and the Klagenfurt Organ Tablature, whose complete contents he both edited (*The Organ Tablature from Klagenfurt*, ms. GV 4/3: Transcription, Commentary & Facsimile, 3 vols., Zabrze: ad artem musicae, 2009) and recorded (world first recording, with MDG, 2011).

IV

Manfred Novak - The Keyboardist's View: Playing Josquin on the Van Straten organ

Exploring the interrelations between organ design and the development of intabulation techniques (Cf. the previous essay in this Research Report[1]), I arrived at the suggestion that the increasing concern for accurate part-writing and homogenization of parts, which can be observed in the development of intabulations during the fifteenth and sixteenth centuries, correlates with the implementation of instrumental features that facilitate the execution thereof. Narrower keyboards make it possible to play wide intervals and multi-voiced chords; playing aids, such as pull down pedals or pedal couplers, enable the player to add some notes of the same sound with his feet if necessary; and independent pedal-boards of appropriate compass, being based on the same pitch as the manuals, allow for playing one part entirely on the pedals.

In this essay[2] I will approach these issues from a more artistic and practical perspective by experimenting with playing intabulations of Josquin's music from various sources in various intabulation styles on the Van Straten organ. The Van Straten organ is a reconstruction of an instrument which was built by Peter Gerritsz for Nicolaïkerk in Utrecht in 1479.[3] Thus, it is a current interpretation of a medieval organ, making use of the knowledge gained in

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1 Manfred Novak. "The Klagenfurt Tablature: On the Brink of the Renaissance". In Hans Fidom (ed.), *Orgelpark Research Report* 4. Amsterdam: Orgelpark, 2017.

2 This article is the text of a lecture given in the framework of "Colloquium: Josquin des Prez" on December 3, 2016, at Orgelpark, Amsterdam. In this written format, the spoken idiom of the lecture has been kept.

3 The Van Straten organ was inaugurated on April 21, 2012.

investigating the surviving parts of the instrument by Peter Gerritsz.[4] The organ has two manuals, the main manual playing a *Blokwerk* without the possibility of separating single ranks. The second manual has three stops: a Diapason 8′ (“Doof”) throughout the whole compass (F-f2), with an added 4′ rank for the lowest octave;[5] a mixture (“Positie”) that complements the Doof to a Blokwerk from B upwards; and a Cimbel[6] sounding from f0 upwards. The pedal plays its own single rank of pipes from F to f (“bourdonnen”), sounding on the same pitch as the Doof of the second manual (8′ pitch). The keys are broader than what is common today, and the current temperament is ¼ comma mean tone.

Thus, the Van Straten organ represents a style of late medieval organ building which was common during Josquin’s lifetime. However, in relation to the transmitted keyboard intabulations of Josquin’s music, the earliest of which were written during the last years of his life, this organ represents an earlier style. A different type of organ, for example, the one which Arnolt Schlick described in his *Spiegel der Orgelmacher und Organisten* from 1511, would be closer to the transmitted intabulations in terms of their time and place of origin.[7]

4 The surviving parts include: the wind chest of the Hoofdwerk, the tracker of the Hoofdwerk and partly of the Bovenwerk, approx. 60 pipes, and the pipe-rack. Cf. the essay by Wim Diepenhorst elsewhere in this Report.

5 The keys F–e0 play two ranks (8′ + 4′) from the Hoofdwerk via a transmission; the ranks for the keys F–B flat cannot be switched off.

6 The existence of a cimbel in the original Gerritsz organ is not documented by surviving parts of the instrument.

7 Concerning Schlick’s preference for separate ranks as well as his choice of stops for an instrument “useful for organists” (39), see chapter 5 of his *Spiegel der Orgelmacher* (quoted after Arnolt Schlick. *Spiegel der Orgelmacher und Organisten.* Buren: Frits Knuf (ed. Elizabeth Berry Barber), 1980, 59–69).

The advantages of that type of organ would comprise:

- a variety of separate stops for either of the manuals as well as the pedal, thus allowing for adjustments of colour and volume[8]
- a larger pedal compass allowing playing an entire bass line[9]
- a homogenous sound quality over the entire tonal compass[10]

These features are especially beneficial for performing polyphony because crossings of parts and unisons can be made heard, at least partly, and the bass part can be played on one and the same sound throughout. But 16th-century organists who notated, transmitted and played Josquin’s music might not always have had the most modern instruments at hand. In experimenting with performing Josquin intabulations on the Van Straten organ we can look for common ground of the different aesthetics of this instrument and the intabulations. I will focus on three subjects:

- The number of parts and the homogenization of all the parts of a composition: How does it influence the performance on this organ?
- The pedal, because it is the absence or presence and the respective design of the pedal that greatly limits or widens the possibilities of execution.
- The medieval *Blokwerk* sound.

My choice of intabulations is restricted to sources in German tablature notation because they include the earliest examples of transmitted keyboard

8 Schlick: “Furthermore, it is well that the registers in manual and pedal all be individually controllable, so that one may play a specific piece registered with similar sounds in manual and pedal”. Cf. Note 7. Here 63.

9 Schlick: “To make good free bass counterpoint in the pedal, it is, in my opinion, necessary to have a twelfth of natural keys, together with the semitones between them, from F under the gamut to middle c. One can do a great deal with this, not only one part, going high and low, but also two or three parts together”. Cf. Note 7. Here 43.

10 Cf. Note 8.

intabulations of Josquin's music, starting with the tablature book by Fridolin Sicher from the years 1512 to 1521,[11] and ending with the Klagenfurt Tablature[12] from circa 1560, the first collection written in pure letter notation. Within this time frame, the only sources showing other types of notation originated in the 1550s on the Iberian Peninsula and thus seemed too remote for relating them to the Van Straten organ.[13]

Intabulations

I'll start with discussing the options the second manual, the Bovenwerk, provides. None of these is ideal, because there are "breaks" in every registration one could choose. The Bovenwerk does not provide a homogenous sound quality over the entire keyboard compass. Playing the Doof, the break is between e and f in the tenor octave, where the 4' rank stops.

Scale c0 to g0, played on the Doof

[sound file only available in the electronic version of this book]

play stop

11 Sicher, Fridolin. [*Tabulaturen des XVI. Jahrhunderts*. 3.] *St. Galler Orgelbuch: Die Orgeltabulatur des Fridolin Sicher* (St. Gallen, Codex 530). Thomas Warburton and Hans Joachim Marx (ed.), *Schweizerische Musikdenkmäler* VIII, Winterthur: Amadeus, Basel: Bärenreiter, 1992, 15.

12 Kärntner Landesarchiv, MS GV 4/3. For a modern edition see *The Organ Tablature from Klagenfurt, ms. GV 4/3: Transcription, Commentary & Facsimile*, 3 vols., ed. Manfred Novak, Zabrze: ad artem musicae, 2009.

13 Coimbra, Biblioteca Geral da Universidade, MS 48 (1559), and Luys Venegas Henestrosa, *Libra de Cifra Nueva para tecla harpa y vihuela*, Alcalá de Henares (1557).

Playing the Positie, the break is between B-flat and B of the lowest octave, where the Positie starts.

Scale F to c0, played on the Positie

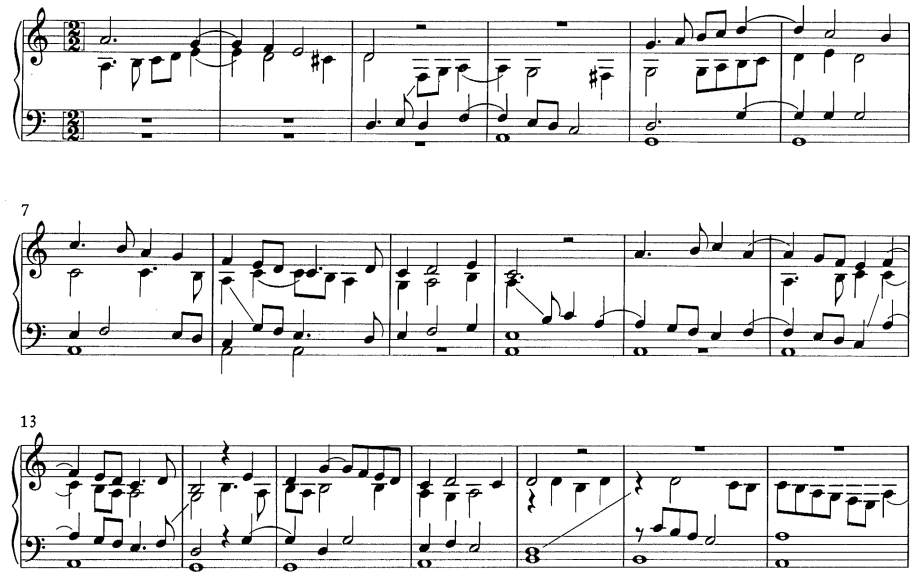
[sound file only available in the electronic version of this book]

play stop

What does this mean for performing four-part polyphony? I'd like to demonstrate this with the help of Josquin's *Magnificat quarti toni* from the Sicher Tablature, and play the verse "Quia fecit" on the Doof. The problem with the 4' rank in the lowest octave is that in places the counterpoint gets inverted and the tenor becomes the highest part (see example 1, bar 3, 8-10, 13-14, and 16).

Example 1

Magnificat quarti toni, "Quia fecit", from Sicher Tablature, bar 1-19 (SMD 8)



Magnificat quarti toni, "Quia fecit" from the Sicher Tablature,
played on the Doof, bar 1-26
[sound file only available in the electronic version of this book]

play **stop**

If I choose the Positie the bass will be problematic, because on low A and G of the *cantus firmus* the sound of the Positie is not available, so these notes might get a bit weak, and there might be an audible break of the line when the bass moves up to B from bar 17 onwards.

Magnificat quarti toni, "Quia fecit" from the Sicher Tablature
played on the Positie, bar 1-26
[sound file only available in the electronic version of this book]

play **stop**

In order to keep a homogenous quality in the bass *cantus firmus*, I could play it on the pedal with the bourdonnen. This slowly moving line with its narrow ambitus can easily be played in the pedal. At the same time it makes the entire movement much easier to play by reducing the number of parts which have to be played on the manual. Using the pedal has yet another advantage: I do not have to shorten the bass note in bar 5 to play the alto with the same hand. This shortening of notes is a technique which we know from the *Fundamentum* by Hans Buchner[14] and from some intabulations where it was actually notated by the intabulator.[15] However, Arnolt Schlick

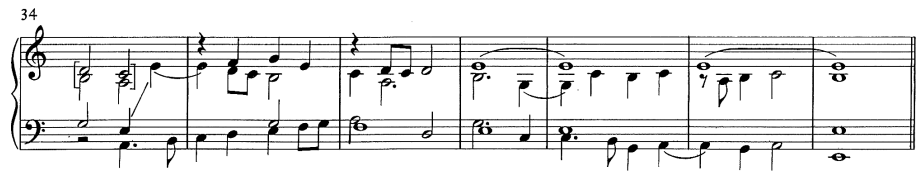
14 MS Basel FI 8a (not before 1524); for a modern edition see *Hans Buchner: Sämtliche Orgelwerke*, 2 vols., ed. Jost Harro Schmidt, *Das Erbe deutscher Musik*, vol. 54 and 55. Frankfurt/Main: Henry Litolff's Verlag, 1974.

15 See e.g., the tablature by Leonhard Kleber, *Tandernack*, Nr. 35.

was opposing this technique and his favoured organ design and playing technique aimed at reducing the need for such shortening.[16] In spite of all those advantages of pedal playing, one restriction remains: The last phrase in which the bass part leaves the *cantus firmus* has to be played on the manuals because it exceeds the pedal compass on this organ, both on the top and on the bottom end (see example 2), and the break between the notes A/H cannot be avoided.

Example 2

Magnificat quarti toni, "Quia fecit", from Sicher Tablature, bar 34-40 (SMD 8)



The pedal compass advocated by Schlick could, in fact, cover the top end of the phrase. But the final note cannot be covered, neither by the pedal or the Bovenwerk of the Van Straten organ, nor by the organ described by Schlick. Therefore, I will have to transpose the final note one octave up. This procedure of octave transposition is attested to in another tablature book, the one by Leonhard Kleber.[17] Low E is available on the main manual of the Van

16 Schlick: "Not only polyphony, but also many smaller songs and other pieces with three or four parts, cannot be played perfectly on the manuals, as is the case when parts go too far from each other, so that one voice must give way to another or be silent at times altogether because one cannot reach it with the hands. Also sometimes the voices come too close together, so that they coincide, as at a cadence. This may be done perfectly, and each part may better have its own tone and be heard, if the pedal and manual are used together" Cf. Note 7. Here 29–31.

17 In Nr. 105 of the Kleber Tablature (*Ave sanctissima maria in mi*), the closing bass line (A-G-F-e) leaps up a seventh to the final note in order to match an F-compass.

Straten organ, but only in connection with the Blokwerk sound. I'll come back to the question of the Blokwerk sound further down in this article and for now continue on the topic of pedal playing.
I'll play the whole verse making use of the pedal. The last phrase of the bass I have to play on the manual and accept the missing Positie sound for the notes A and G.

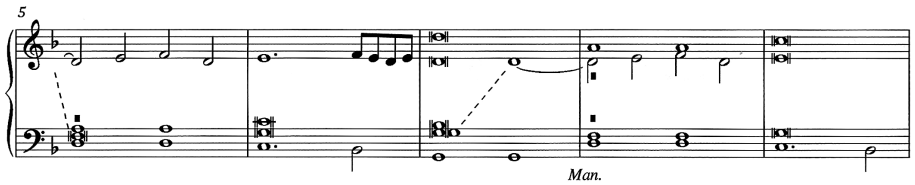
Magnificat quarti toni, "Quia fecit" from the Sicher Tablature, played on the Positie and the bourdonnen
[sound file only available in the electronic version of this book]

play **stop**

When we get to a composition in six parts, such as "Ave Maria" from the Klagenfurt Tablature, the pedal has to be used; in places it is impossible to play all of its parts on the manual only (see music example 3).

Example 3

"Ave Maria", from Klagenfurt Tablature, bar 5-9 (ed. Novak)



The broad keys of the Van Straten organ make playing intervals larger than an octave or ninth – depending on your hand size – problematic,[18] but even

18 Small-handed players might even have problems with stretching an octave. Cf. my essay on

on narrower keys I could not stretch the chord in bar 7. So the question is: *How* to use the pedal?
As an experiment I will try to arrive at a sound as homogenous as possible, avoiding the mentioned breaks on the Bovenwerk. I take advantage of the fact that in combining the pedal and the Doof, I do have a pure 8' sound over the whole compass of three octaves, having the split or overlap between pedal and manual on tenor f. Thus, on the pedal I'll play the bass wherever the compass allows for this, and also low pitches of other parts if they would otherwise invert the counterpoint due to the 4' rank of the Doof. This means, that in places I have to play two parts in the pedal, and not only the bass part will switch between pedal and manual, but also the second lowest part. Because of this approach slight changes in sound quality might be observed. This manner of using the pedal is a mixture of the 15th-century practice of always playing the lowest notes on the pedal irrespective of the part-writing,[19] which we know from the Buxheim organ book, and the technique of playing more than one part on the pedal described by Schlick.[20] In addition to this carefully worked out pedal part, ornaments that encompass the "breaks" of the Doof (e0/f0) and between pedal and Doof (f0/g0) have to be transferred to a higher part or skipped altogether.

"The Klagenfurt Tablature: On the Brink of the Renaissance" elsewhere in this Report.

19 Cf. Hans Rudolf Zöbeley. *Die Musik des Buxheimer Orgelbuchs: Spielvorgang, Niederschrift, Herkunft, Faktur* [= Thrasybulos G. Georgiades (ed.), Münchner Veröffentlichungen zur Musikgeschichte, vol. 10], Tutzing: Hans Schneider Verlag, 1964, 85–93. Probably the pedal sounded one octave lower than the manual (i.e. at 16' pitch), cf. Kimberly Marshall, *Historical Organ Techniques and Repertoire*, vol. 3*: Late-Medieval, before 1460*, Colfax, NC: Wayne Leupold Editions, 1998, 20. In principle, in the 15th century we find evidence for both, pedals sounding one octave lower than the manual, and pedals at the same pitch as the manual.

20 Schlick: "Playing only on the manuals has been standard practice outside the German countries up to now, but now they are studying the pedals as well, and not without reason, for with the hands alone it is impossible to play every piece containing many parts correctly and with the parts in proper relation. But if one has the pedal to help, taking two or three voices, and also four in the manual, this makes seven parts altogether, which is impossible on the manuals without the pedal." Cf. Note 7. Here 29.

"Ave Maria" from the Klagenfurt Tablature
[sound file only available in the electronic version of this book]

play **stop**

So far, I have not used the Blokwerk of the main manual. I will play again "Quia fecit" from *Magnificat quarti toni* for demonstrating how this sound works with four-part polyphony. It is also the only option on this organ to play the final low E, because this note is not available on any other division (see music example 2).

Magnificat quarti toni, "Quia fecit" from the Sicher Tablature,
played on the Blokwerk of the Hoofdwerk
[sound file only available in the electronic version of this book]

play **stop**

This Blokwerk-version unfortunately suffers from the ranks of low fifths which make the polyphony unclear and triads quite dissonant.[21]

21 Arnolt Schlick criticized such "old-style" Blockwerk-compilations in detail: "The mixture should be sharp-edged, not of fifths and thirds that one may hear distinctly. These are, to one who understands these things, more repellent and horrible than merry and pleasant to hear. They make no beauty, but destroy good counterpoint and chords through their screaming. It is also to be noted that when one takes together a fifth, tenor C and G, in addition to the fifth that this makes itself there is the fifth to the G, middle d, which with the C below, gives a dissonance, a ninth or a second. Similarly the third makes a dissonance. Take tenor E with C. Then the fifth to the E, B natural, makes a seventh against the tenor C. Not only the lowest quint, as was formerly built and is still found in some instruments, but also the next an octave higher,

So we can expect the Blokwerk to be more successful at lighter textures that do not rely on building full triads. As an example I chose *Cum sancto spiritu* from the Cracow Tablature, an intabulation from Josquin's *Missa de Beata Virgine*. The piece starts with mostly two parts performing at the same time. Only in the end it employs all the four parts simultaneously, and there the intabulator reduced the texture by eliminating one part, thus keeping the intabulation in three parts at the most. Such a reduction of parts was a quite common technique for intabulations before 1550.[22] The reason for reducing the number of parts might not only be striving for easier playability, but also the Blokwerk sound which does not favour thick textures.

Cum sancto spiritu (in three parts) from the Cracow Tablature,
played on the Blokwerk of the Hoofdwerk
[sound file only available in the electronic version of this book]

play **stop**

In the final chord, the third sounds rather dissonant. This could be avoided by deviating from the source text and playing an open fifth instead.
The Cracow Tablature contains a second intabulation of the same piece which does not reduce the texture in the end but keeps all the four parts. I'll play the ending so that you can compare it to the three-part version.

the twelfth, [does this], though it is not as noticeable or as harsh as the lower [quint's effect]. These should still be avoided, small as they are, because one hears them, whether in pedal or in manual." Cf. Note 7. Here 69–71.

22 Common techniques in the Cracow Tablature are: eliminating parts, especially of five-part models, avoiding crossings of parts and (modest) ornamentation. Cf. Wyatt M. Insko. *The Cracow Tablature [with] Volume II: Transcriptions*, 2 vols., Dissertation Indiana University, Ann Arbor, MI: University Microfilms, Inc., (1964). Vol. 1, 74–87.

Cum sancto spiritu (in four parts) from the Cracow Tablature, played on the Blokwerk of the Hoofdwerk, bar 29-39

[sound file only available in the electronic version of this book]

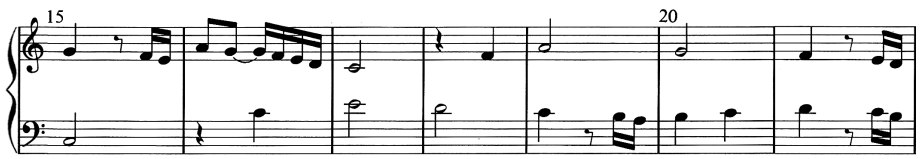
play stop

One might wonder why the writer of the Cracow Tablature would need two versions of the same piece, one in three and the other one in four parts. One reason might be having the reduced version at hand when only a Blokwerk sound was available.

Rarely intabulations show even thinner textures, for example the *Duo* from the Clemens Hör[23] tablature which is the two-part setting of "Agnus II" from *Missa de Beata Virgine*. Here, playing on a single stop of the organ might sound too thin and empty; the Blokwerk can add colour and power to the individual parts. On the Van Straten organ I have two Blokwerk sounds at my disposal, one on each manual, so I can play the *Duo* on two manuals. This choice makes the crossing of parts clear and audible (see music example 4, bar 16-18), and thus corresponds to Schlick's preference for accurate execution of the part-writing.[24]

Example 4

"Duo" (= "Agnus II" from Missa De Beata Virgine), from Hör Tablature, bar 15-21 (ed. Warburton)



23 Hör, Clemens, [*Tabulaturen des XVI. Jahrhunderts*. 2.] *Die Orgeltabulatur des Clemens Hör* (Ms. Zürich, Zentralbibliothek, Z. XI. 301), *Schweizerische Musikdenkmäler*, vol. 7, ed. Hans Joachim Marx, Winterthur: Amadeus, Basel: Bärenreiter, 1970.

24 Cf. Note 16.

The lower voice of *Duo* does not go lower than c, so there is no problem with the Positie starting only at B: the player is free to decide which voice to play on which manual. As I'd like to present the Cimbel, a treble solo stop, in playing this piece, I will play the upper voice on the Bovenwerk with the Cimbel.

"Duo" from the Hör Tablature, played on the Cimbel (Bovenwerk) and Blokwerk (Hoofdwerk)

[sound file only available in the electronic version of this book]

play stop

In such a context the Blokwerk sounds very successful and convincing, but it is in earlier keyboard music that we more commonly see those thinner textures that do not rely on building full triads. When the style changed and the vertical component became more important, the Blokwerk sound starts to get problematic, especially in connection with low or dense polyphonic textures. Thus, as a general rule, it is better suited for music earlier than Josquin.

Conclusion

Did we actually find common ground between the keyboard intabulations of Josquin's music and the Van Straten organ?

We hardly did. Even if a successful sound for polyphony in four or more parts is provided by the Bovenwerk, we run into serious problems of compass, both of the Doof and of the Positie, if we want to avoid the breaks in sound quality. Also the pedal compass is quite limited with regard to Josquin's music. Lacking a pull down pedal or transmission, the sound colour of the bass line will change throughout a piece, although the Van Straten organ does provide a very smooth transition from the bourdonnen to the Doof. Speaking of compass, the large medieval compass of the main manual still provides E which is occasionally used by early sixteenth-century

tablatures.[25] However, this E is only available on the Blokwerk sound, which is hardly appropriate for Renaissance polyphony; neither is the highlighted treble range of the Van Straten organ.[26]

Thin textures work well, as was proven by *Duo* and *Cum sancto spiritu*. The 8′ pitch of the pedal matching the 8′ pitch of the manuals, is actually advantageous in contrast to other early organs which provided a bass extension to the manuals in the pedal. The bourdonnen are surprisingly versatile: They beautifully balance the Doof but also combine reasonably well with the Positie. Most remarkable is the homogenous 8′ sound which is provided over the entire range of three octaves when combining pedal and Doof. This is the sound I used for *Ave Maria*. It is my personal favourite for Josquin's polyphony, and it can even be used for pieces in five or six parts. It does, however, necessitate a lot of complicated tricks applied by the player. For that reason it does not come as a surprise that at the time of the beginning 16th century, from when the first intabulations of Josquin's music were handed down to us, some contemporary voices made a point for building a different type of organ.

25 In contrast, many sixteenth-century organs, including Arnolt Schlick's ideal organ, start both their manual and pedal compasses on F. Already in the 15th century we find a number of organ keyboards and pedal-boards which start their compass on F. Although the B-compass disappears in the 16th century, the development of keyboard compass was far from being linear during the 15th and 16th centuries.

26 For further information consult Kimberly Marshall's contribution to this Report.

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Abstract

The increasing concern for accurate part-writing and homogenization of parts, which can be observed in the development of intabulations during the fifteenth and sixteenth centuries, correlates with the implementation of instrumental features that facilitate the execution thereof. What if we play Josquin intabulations on the Van Straten organ? Even if a successful sound for polyphony in four or more parts is provided by the Bovenwerk, we run into serious problems of compass, both regarding the Doof and the Positie. Also the pedal compass is quite limited with regard to Josquin's music. Lacking a pull down pedal or transmission, the sound colour of the bass line will change throughout a piece, although the Van Straten organ does provide a very smooth transition from the bourdonnen to the Doof. Thin textures work well. The 8′ pitch of the pedal matching the 8′ pitch of the manuals, is advantageous in contrast to other early organs which provided a bass extension to the manuals in the pedal. The bourdonnen are surprisingly versatile: They beautifully balance the Doof but also combine reasonably well with the Positie. Most remarkable is the homogenous 8′ sound which is provided over the entire range of three octaves when combining pedal and Doof. This sound is my personal favourite for Josquin's polyphony, and it can even be used for pieces in five or six parts. It does, however, necessitate a lot of complicated tricks applied by the player. In conclusion, it does not come as a surprise that in the early 16th century some voices made a point for building a different type of organ.

Manfred Novak

Manfred Novak works as organist and choir director at the Benedictine monastery of St. Lambrecht in Austria. He is active as a performer (organ recitals in various European countries) and composer. As a researcher he has edited two books, lectured at international conferences and universities, and has published on topics of liturgical music after the Second Vatican Council and the Klagenfurt Organ Tablature, whose complete contents he both edited (*The Organ Tablature from Klagenfurt*, ms. GV 4/3: Transcription, Commentary & Facsimile, 3 vols., Zabrze: ad artem musicae, 2009) and recorded (world first recording, with MDG, 2011).

V

David Fallows - Songs in the Buxheim Keyboard Manuscript

The first surprise for those who do not know the *Buxheim* keyboard manuscript is that about 200 of its 260 pieces are intabulations of secular songs; and only about thirty could be described as sacred pieces (the rest are preludes and exercises). That is not necessarily to say that the secular songs could not be performed in church; but it is quite definitely to say that the Buxheim manuscript offers almost no information about organ music for the liturgy.

Even so, it is by far the largest instrumental collection of the fifteenth century. It had nothing to do with Buxheim: that is just where the manuscript was in 1883 before it came to the Bavarian State Library in Munich. But its origins must be from somewhere in southern Germany or perhaps German-speaking Switzerland.

Generally, we see this manuscript in two sections. The first and main section is all written by a single very neat and consistent copyist, who also listed those pieces in an index at the front of the book. That main section runs from folio 1 to folio 124, filling the first two of the three volumes of the modern edition by Bertha Antonia Wallner.[1]

The remaining 40 leafs of the book are much less formally copied; but the whole book was prepared uniformly for keyboard music from the start: it has absolutely uniform 12-leaf gatherings throughout, all numbered at beginning and end; each page is uniformly ruled with frame-rules at the sides and bottom and with six staves per page, all of seven lines, all measuring 22 millimetres on a frame 21.5 centimetres; and the numbering

1 The rest of the manuscript, in Wallner's third volume, is rather later and is the work of several different copyists – differently analysed by nearly every student of the source.

of the folios is also uniform through to the end of the book. Plainly the book was planned as a coherent repertory of keyboard music. It looks very much as though the main layer was copied in about 1460, with the rest added onto the empty staves later in the book over the next ten years or so.[2]

The absolute uniformity of the ruling throughout and the flawless elegance of the main copyist make it look as though this were a court manuscript, a grand repertory; and it has even been suggested that it was prepared for the Bavarian court in Munich. But that is almost certainly not the case, for two main reasons. The first reason is that it is copied entirely on paper, when any such repertory in those years, particularly for a major court, would almost certainly be on parchment. And the second reason is that it is absolutely without decoration – by contrast, for example, with the Berlin manuscript that we call the *Lochamer Liederbuch*. We must conclude, then, that this was for a small institution or perhaps even a private copy. It is just that the main copyist has beautiful and consistent handwriting. It is absolutely not a presentation manuscript.

A second feature is important. There is no trace of later corrections or adjustments to the manuscript. Once the copyist had written a particular page he seems never to have returned to it. There is a surprisingly high proportion of simple copying errors, which strike the eye at a glance but remain uncorrected.

2 The published facsimile, ed. Bertha Antonia Wallner (Kassel, 1955), includes (p. IV) the argument that the main layer was copied after 1465, the year in which Ulrich Füetrer came to Munich from his home in Ingolstadt (cited there without documentation). While it is true that Füetrer – poet, chronicler, painter and Maistersinger, author of "Des Füetrers Ton" – knew of Paumann, whom he mentions in the introduction to his poem Lanzilot ("Und maister Cunradt, der ye was plind/ und meins fürsten Organist ist gewesen") there are no clear grounds for Wallner's assertion that the *Buxheim* piece headed "Der Füterer" (f. 60) was necessarily composed by or associated with Ulrich Füetrer. After all, Munich origin of the manuscript is by no means assured. And even if it were, it seems unlikely that Füetrer would be commemorated by a new work so soon after his arrival in Munich. My estimate of the date of the main layer is based on the repertory.

And the third feature is that it is in mint condition. A paper manuscript that had been used for playing at all often would very soon show signs of wear and tear. In Buxheim there are absolutely none. Even though there are dozens of added pieces in the last three gatherings, there is just no indication that anything was later consulted. Moreover, because it was published in facsimile as early as 1955, it has had rather less modern usage than most comparable manuscripts.

Bertha Antonia Wallner published her famous edition in *Das Erbe deutscher Musik* posthumously in 1958–1959; she had died already in 1956, which means that she almost certainly had no chance to read the proofs and it had more mistakes than it should. That is why a revised edition was published in 1982–1983 (with the date and the fact of the revision carefully buried away on the reverse of the title-page). But it must be emphasized that this is a very literal reproduction of what is in the manuscript, errors and all. The General Editor of *Das Erbe deutscher Musik* did mention that they had planned to publish a further volume with concordances and the staff-notation originals of the intabulations; but this never happened.

Players would be very well advised to use more recent performing editions, such as those of Alan Booth (Hinrichsen, 1959–1960) and of Bernard Thomas (London Pro Musica, 1981ff), who took careful account of the original pieces – quite often having to resequence the bars in his transcriptions. The second intabulation of *Dueil angoisseux* (no. 60) for example, skips from bar 6 to bar 12, and from bar 17 back to bar 7; later it skips from bar 27 to bar 32, and then from bar 35 back to bar 28. It looks very much as though the copyist was working from an exemplar that had the music written across two pages, each around 6 bars wide. (Sensibly, by the way, Bernard Thomas did not attempt to edit this piece, which has further absurd errors.)

But over the next five years after Wallner's edition came three doctoral theses: by Robert Lord, Eileen Southern and Hans-Rudolph Zöbeley. Various articles and reviews over the next five years added a few more details. So the work of the 1960s both produced a lot of new material and more or less summarised the enormous earlier literature on the manuscript, dating back to 1887. Most of this information was beautifully

and compactly assembled in Marie-Louise Göllner's volume of the Bavarian State Library catalogue, published in 1979. This is much more than a mere digest: she corrects identifications and adds several new ones. It almost entirely reflects the state of knowledge at that time. And it provides an excellent basis for further study.

Table 1

Buxheim keyboard manuscript (*D-Mbs* Mus. Ms. 3725)
Main layer (ff. 1–124; nos. 1–230) perhaps copied in Munich, ca.1460

Main adjustments to list in Marie-Louise Göllner, *Bayerische Staatsbibliothek: Katalog der Handschriften, ii: Tabulaturen und Stimmbücher bis zur Mitte des 17. Jahrhunderts* (Munich, 1979), pp. 159–171. Further details on most of these in David Fallows, *A Catalogue of Polyphonic Songs 1415–1480* (Oxford, 1999)

3	Da madame: Pulloys ascription only a hypothesis
4	In mentem veniunt cucumeres: = no.175: Wann ich betracht die vasenacht and almost certainly an English carol (Fallows)
10	Ach guter gesell: m.1–16 in Speciálník (p.515) and other Eastern sources as 'Jesus Christus nostra salus'; in lauda style
37 etc	Vil liber zit/Annavasanna/Une foys avant: based not on the basse danse but on the polyphonic chanson in *F-Pn* n.a.fr.10660 and *GB-Lbm* Cotton Tit. A.xxvi (Crane)
41 etc	Benedicite: T by Monk of Salzburg (Southern)
43	Portigaler: = Or me veult bien Esperance mentir (Bent)
62	Mombin Imparfay: a new piece begins after m.19 (Southern)
63	Thun jors: two English sources, one headed 'To iours', suggest English origin (Fallows)
71	Amen super G: not, as read by Göllner, 'super B [enedicite]'; thus quite independent of preceding 'Benedicite'
74	Maria tusolacium: = Ave mater o Maria, in Kras, BU, etc (Welker)
75	Virginem mire pulchritudinis: = A descort sont Desir et Esperance, in Reina etc (Ward)
79–80	Modocomo: 2nda pars includes repeat with ouvert and clos endings, therefore probably derived from a virelai (B.Thomas)
86	Ein güt selig Jar: T is Tres belle et bonne in Namur (Southern)
87	Es für ein buer ins holtze: not related to piece in Loch
101	Eschlave: not the song by Binchois, though just possibly modelled on it, since it opens similarly and is the same length
117/199	Vierhundert jare: polyphony originally Fontaine's A son plaisir, in Ox V and Pz (Welker)
118	Mi ut re ut: based on basse-danse Venise (Southern)
133/134	L'ardant desir: virelai, before 1400 (Fallows)
140	Ich bin by Ir: T derives from Binchois' L'ami de ma dame (Crane)
163	Pange lingua [Touront]: also in Strahov and Speciálník
178	Ad primum morsum: fuller text in many sources (Rumbold) and famous from a setting by Lassus
229	Sig seld und heil: also in Parma 1158
230	[untitled]: in Strahov (f.247v) ascribed to Touront (Mitchell)
253–4	[untitled]: these form a single piece (Schrammek)

Scattered comments by various scholars have in fact added a fair number of new and revised identifications. They are mainly in work devoted to entirely different subjects, particularly by Reinhard Strohm, Lorenz Welker, Tom Ward and Robert Mitchell. The most important of these are listed in table 1. But the next surprise about the manuscript is how much of the music has

longer roots than was once thought. Table 2 sketches the chronology of the early pieces, mainly in terms of their earliest known appearance – which is to say cautiously. But several of them seem to me likely to be rather earlier than table 2 implies. Chronology in 15th-century music seems more bafflingly inscrutable the more one examines the likelihoods. But I do wish to offer a few views here, aware that they are not all very solidly based.
The German repertory copied there is hard to date, mainly because we lack early sources. But the 230 works of the manuscript's main layer include about 80 that can be identified as French, Flemish, Italian or English – that is, over one-third. And my mention of English pieces may surprise some: no fewer than 21 of them are by, or probably by, English composers. But of the 80 demonstrably non-German pieces, no fewer than 45 are likely to date from before 1430. That is to say that well over half of the approximately datable works were over 30 years old at the time of copying.
This heavy proportion of music over thirty years old in *Buxheim* may seem surprising in the light of most other known sources after 1450. Some late chansonniers contain Du Fay's *Se la face ay pale*, probably from the early 1430s and Binchois' *Pour prison* of around 1440; most surprisingly, the Mellon

Table 2

Early pieces in Buxheim

Before 1400

A descort (No.75 as Virginem mire pulchritudinis: in Reina etc)
L'ardant desier (Nos.133–4)
Benedicite: Almächtig got (Nos.41, 68–70, 224, by MONK OF SALZBURG)
perhaps Modocomo (Nos.79–80 and 81–82)

Before 1410

Con lagrime (Nos.38, 137–9, by CICONIA, d.1413)

Before 1420

Une foys avant que morir (Nos.37, 51–2, 89–93, 217)
Ave mater o Maria (No.74 as Maria tu solacium; used by Wolkenstein)
Tres belle et bonne (No.86 as Ein güt selig Jar: T copied Namur, ca.1415)
Wach uff myn hort (Nos.100, 218: T used by Wolkenstein)
A son plaisir (Nos.117, 199 as Vierhundert Jare, by FONTAINE)
Love woll I without eny variance (Nos.145 and 192 as Luffil; English)
perhaps Arrogamer/Arroganyer (No.120)
perhaps Wilhelmus Legrant (No.113)
Was ich begynn (Nos.97–8, 205, 207–9)

Before 1430 (or even 1425)

Je loe amours (Nos.16–18, 68–70, 202, by BINCHOIS)
Or me veult bien Esperance mentir (No.43 as Portigaler)
[English carol] (Nos.4, 175 as Wann ich betracht die vasenacht)

Before 1435

Sub tuam protectionem (Nos.40, 158, by DUNSTAPLE)
Dueil angoisseux (Nos.59–60 as 'Dulongesux', by BINCHOIS)
Puis que m'amour (No.61, by DUNSTAPLE)
Se la face ay pale (Nos.83, 225, by DU FAY)
Esclave puist il devenir (No.102, by BINCHOIS)
Entrepris suis (No.106, by BRUOLO)
Sans oublyer sans faire departie (No.122, by GEMBLACO)
Qui veult mesdire si mesdie (No.128, by BINCHOIS)

By 1440

Mille bonjours je vous presente DU FAY (MuEm, Str2 etc) No.127
L'ami de ma dame est venu (Ich bin by ir) BINCHOIS (Tr87) Nos.140–2
Adieu mes tresbelles amours BINCHOIS (MuEm, EscA 1, Tr92 etc; cit Molinet) Nos.143–4, 196

chansonnier includes *Or me veult* probably from the 1420s. But otherwise there is hardly anything. That stands in stark contrast with sources from the first half of the 15th century. The Oxford manuscript and Squarcialupi Codex of Trecento song have works going back, it now seems, over fifty years. Trent 87 and Strasbourg contain occasional pieces composed up to a hundred years earlier. But the years around 1450 represent a turning-point in many ways; and one of those ways is visible in the majority of musical sources which suddenly show a complete lack of interest in earlier music – an attitude most famously represented by Tinctoris's slightly later comment that nothing composed before about 1435 was worth bothering about.

The third surprise about the manuscript is that the pieces most often intabulated here are among the oldest. Five versions of the Monk of Salzburg's *Almächtig got*, from the 14th century; four of Ciconia's *Con lagrime*, composed probably not long before his death in 1412; no fewer than nine of the anonymous *Une foys avant que morir*, composed before 1420; and seven (some of them incomplete) of Binchois' *Je loue amours*, apparently from before 1430. That already accounts for ten percent of the pieces in *Buxheim*.

Table 3

Binchois in Buxheim: 18 pieces (7 songs)

Je loue amours	number 16–18, 168–70, 202
Dueil angoisseux	number 59–60
Qui veult mesdire	number 128
Esclave puist il devenir	number 102
L'ami de ma dame est venu	number 140–2
Adieu ma tresbelle maistresse	number 143–4, 196
Tout a par moy	number 252

On the other hand, in a German context *Buxheim* looks less unusual. To begin with, the Berlin manuscript containing the *Lochamer Liederbuch* and tablatures often described as Paumann's *Fundamentum organisandi*, copied in the early 1450s, similarly contains a high proportion of early music.

In fact it includes all four of the pieces I just mentioned: *Almächtig got*, *Con lagrime*, *Une foys* and *Je loue amours*; and it contains the untitled song headed *Wilhelmus Legrant*, which must also be from before 1420. *Une foys avant* is also in a tablature fragment published by Martin Staehelin and in the Rostocker Liederbuch fragments of the 1470s, which even include a motet by Philippe de Vitry, perhaps over 150 years old at the time.

It has also long been known that Germanic sacred sources of the 15th and 16th centuries contain music of some antiquity. And, though I didn't dare put it in my list of early pieces, I have a strong suspicion that a date before 1430 may be in order for Buxheim no. 10, *Ach guter gesell*, found in the sixteenth-century Speciálník manuscript and other eastern sources with a Latin text and very much in the Italian lauda style of the 1420s.

This is all considerably clarified by research on Oswald von Wolkenstein and the polyphonic music he borrowed for his songs. Erika Timm long ago showed that most of his foreign models appear elsewhere in German sources; and Lorenz Welker noted that they often took on a new form that is retained with some consistency through those German manuscripts. In terms of the

Table 4

Du Fay in Buxheim: 7 pieces (6 songs)

Par le regard	number 30–31
Se la face ay pale	number 83, 255
Franc cuer gentil	number 116
J'ay grant doleur	number 121 (Strasbourg only)
Mille bonjours	number 127
Le serviteur	number 226

likely originals, that form is badly corrupt – though the German sources often prompt reconsideration of various details in what had hitherto counted as the main sources. Moreover several of these songs also circulated with German titles, thus possibly also German texts, though apart from Wolkenstein none of them has survived beyond the incipit: *Une foys avant* turns up in Buxheim and

other German sources with the title *Vil lieber zit*; *Qui contre Fortune* appears as *Schack melodie*; Du Fay's *Dieu gard la bonne* as *Trag frischen mut*, and so on. But for present purposes there are two matters of importance here: first, that French songs appear to have had a massive circulation in German sources; and second, it has almost escaped notice that there is a far longer history of French songs becoming part of the German repertory. It is by no means confined to Wolkenstein; nor does it originate with him.

We need only glance at the number of German manuscripts from the years around 1400 that contain French songs. Not just Strasbourg and the Prague manuscript XI E 9, but the lost Villingen manuscript, the little page in Vorau, probably copied at Melk; the manuscript 391 actually in Melk, containing *Fuiiés de moy* by Alanus, later used by Wolkenstein; the fragment at Windsheim (containing the song called *Tonat agmen* also used by Wolkenstein but showing every sign of being originally a French virelai), the Munich manuscript 15611; the Munich leaves 29775/6; a fragment at Göttingen apparently including part of *Tonat agmen*; one at Wolfenbüttel; the two sets of fragments at Nuremberg; the fragment at Heiligenkreuz, containing a slightly different repertory but copied by a German speaker. All of these little collections of two or three pieces contain French songs, often with bits of French, albeit usually in garbled form. And the Eastern theory manuscripts of the time also cite mainly French songs. In the light of those sources – and they are virtually the only secular polyphonic sources that survive from Germany before 1420 – we can endorse Erika Timm's view that the travels so vividly described in Wolkenstein's poetry probably have nothing to do with the non-German polyphony he used for his poetry: he could have got it all from local manuscripts.

The large proportion of foreign works in the *Buxheim* manuscript is therefore almost inevitable. That in its turn brings us to my last surprise about *Buxheim*, the matter of Binchois and his heavy representation here. So far as we can now tell *Buxheim* contains more music by Binchois than by any other composer. That may surprise those who think of Du Fay as the most valued composer in the forty years leading up to 1460. On the other hand, there are plenty of indications elsewhere that Binchois was far more valued then than he is today. Most of the manuscripts that we have from those years are from southern Europe, where Du Fay spent most of his time; Binchois by contrast spent

all his known career in the Low Countries, from which we have just one manuscript and a couple of fragments. Even so, as I have shown in some detail elsewhere, Binchois during the 1420s is rather better represented in these Italian manuscripts than Du Fay. The higher proportion of Binchois music in Buxheim may therefore represent a further correction to our current view of their relative importance.

But there is of course an additional detail here. The earliest document we have about Binchois shows him in his home-town of Mons in 1419, paid for playing the organ at the church of Ste-Waudru and described as a young man ("un jovene homme appelet Binchois"). This is at least ten years before he turns up at the court of Burgundy, where he stayed for the rest of his active career, some twenty-five years. At no point in the Burgundian court documents is there any reference to Binchois as an organist – or indeed any reference to an organist at all at the court during these years. But that is perhaps the nature of these court documents: they may seem to us enormously detailed, in that they register every day's absence and report the payments for each day; at the same time, though, they are far less detailed about what these people actually did. But it is obviously intriguing that the most heavily represented composer in *Buxheim* was himself documented as an organist – bearing in mind that it is really only supposition and inference that connect *Buxheim* with Conrad von Paumann.

There is obviously the possibility that the music came from the Burgundian court in 1454 when the Duke Philip the Good was in Landshut and paid a substantial sum in reward for a "blind man who played several instruments, a servant of the duke's two sons." This entry has always been assumed to refer to Paumann, even though he was at the time apparently a servant of the duke, not of his sons. Perhaps it would be safer just to agree that the music of Binchois was almost certainly far more widely distributed than the surviving sources always suggest.

But it does also show, first, that Buxheim is a characteristic source of its time, thoroughly typical of its ambience in its wide chronological and geographical spread. Second, it reminds us aggressively that the indigenous German repertory existed in a very heavy context of French and English music. And finally it shows that Buxheim may well contain traces of many kinds of music that cannot otherwise be recovered.

Abstract

Only 30 of the 260 pieces in the *Buxheim* keyboard manuscript, which originated around 1460 in or near southern Germany, could be described as sacred pieces. It was prepared uniformly for keyboard music from the start. The manuscript seems to have been conceived for a small institution or perhaps even as a private copy. It is not ornamented, it contains no corrections, and it is in mint condition.

The 1960s both produced a lot of new material and more or less summarised the enormous earlier literature on the manuscript, dating back to 1887. Marie-Louise Göllner's volume of the Bavarian State Library catalogue, published in 1979, corrects identifications and adds several new ones.

A surprisingly large amount of the music appears to have longer roots than was once thought. Well over half of the approximately datable works were over 30 years old at the time of copying. French songs appear to have had a massive circulation in German sources.

Another surprise is the relatively high proportion of Binchois music. This may represent a further correction to our current view of their relative importance.

Moreover, it is intriguing that the most heavily represented composer in *Buxheim* was himself documented as an organist – bearing in mind that it is really only supposition and inference that connect *Buxheim* with Conrad von Paumann.

The Buxheim manuscript hence is a characteristic source of its time, thoroughly typical of its ambience in its wide chronological and geographical spread. It reminds us that the indigenous German repertory existed in a very heavy context of French and English music, and it may well contain traces of many kinds of music that cannot otherwise be recovered.

David Fallows

David Fallows (1945, Buxton) studied at Jesus College, Cambridge (B.A., 1967), King's College, London (M.Mus., 1968), and the University of California at Berkeley (Ph.D., 1977). From 1976 until his retirement in 2010 he taught at the University of Manchester. His publications are almost all on the music of the "long" 15th century, including books on Dufay (1982) and Josquin (2009) as well as a catalogue of the 15th-century song repertory in all European languages (1999). Recently he has turned his focus more to English music, with a major Musica Britannica edition of Secular Polyphony, 1380–1480 (2014), and an elaborately commented facsimile of The Henry VIII Book (2014). He is now preparing a book on the music of the English carol in the early 15th century. He was appointed Chevalier de l'Ordre des Arts et Lettres (République Française) in 1994, elected a Fellow of the British Academy in 1997 and was President of the International Musicological Society, 2002–2007.

VI

David Catalunya - Thirteenth-Century "Organistae" in Castile

References to masters of polyphony and organ players begin to appear on the Iberian Peninsula as soon as the twelfth century and, with greater frequency, in the thirteenth century. We find them in Tarragona (twelfth century), Toledo (twelfth and thirteenth centuries), Zamora (late twelfth and thirteenth centuries), Burgos (thirteenth century), Orense (1230), Santiago (1235), Segovia (1247), Salamanca (1254) and Lleida (1279).[1] These are brief references generally limited to the mention of persons holding the title of "organista" in administrative records, documents and obituaries. The documents usually do not mention the specific functions of these organistae. We may assume, however, that at least some of them were involved in the use, or even in the production, of some of the Ars Antiqua manuscripts preserved on the Iberian Peninsula, and we know that some of these organistae were required to play the organ.

An obituary from the Toledo Cathedral bears witness to three persons referred to as organistae: "magister Dominicus Paschasii organista canonicus toletanus", "magister Galterius organista", "Iocellinus organista".[2] Although this obituary does not generally include the year of the person's death, Ramón Gonzálvez Ruiz dates its compilation to the first quarter of the fourteenth century.[3] The obituary does, however, include a number of

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1 See Appendix.

2 Toledo, Biblioteca Capitular, 42-30, ff. 28r (February 26), 16r (February 2) and 65v (May 23) respectively.

3 Ramón Gonzálvez Ruiz, *Hombres y libros de Toledo (1086-1300)*, Madrid: Fundación Ramón Areces, 1997, pp. 127, 131 and elsewhere. As I see it, the codicological and palaeographical features of this manuscript support Gonzálvez's dating. The dating in the late fourteenth

persons deceased in the twelfth and early thirteenth centuries. For example, we have the case of a cathedral cantor called Juan de Talavera (f. 48v), active in Toledo between 1186 (or earlier) and 1212, who in his testament endowed the cathedral with six houses and six books, among which were the *Etymologiae* of Isidore of Seville and liturgical books.[4] Another obituary, compiled in the last decade of the fourteenth century, does not mention Juan de Talavera, which suggests that the celebration of his anniversary had been discontinued by that time.[5] Because the organistae are not referred to in other obituaries from the fourteenth century, it would be logical to assume that they, like Juan de Talavera, lived in the twelfth and the thirteenth centuries. A further clue to the relative chronology of these three organistae is found in the position of their names within the list of the deceased (see Figure 1).[6] While Dominicus Pascasii is the last on the list for the day of his death, Galterius and Iocellinus are among the first.

Moreover, the latter two names seem to point to organistae coming from beyond the Pyrenees, which would fit the French-staffed context of the Toledo Cathedral during the twelfth century.[7] The diminutive form of the

century proposed by Hernández and Linehan (*The Mozarabic Cardinal. The Life and Times of Gonzalo Pérez Gudiel*, Firenze: Edizioni del Galluzzo, 2004, p. 40, footnote 56) seems less likely to me. It is also worth noting that the obituary was compiled as a unitary codex by a principal hand and, despite the empty space left on each page for the addition of further names, relatively few additions were actually inserted.

4 González, *Hombres y libros*, pp. 122-128.

5 Toledo, Biblioteca Capitular, 42-31. González, *Hombres y libros*, p. 127.

6 Obituaries usually tend to reflect the chronology of the deceased, as is the case, for example, in the Tarragona obituary cited below.

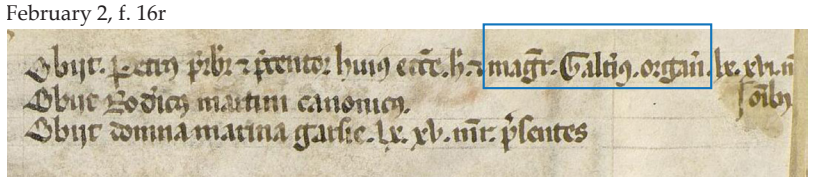
7 Only one year after the city was taken in 1085, Alfonso VI confirmed the French Cluniac Bernard de Sédirac as Archbishop of Toledo. This opened the door to a significant influx of French clergymen, canons regular and monks, not only Cluniac but also Cistercian, which contributed to the consolidation of the Frankish-Roman Rite in Castile. Yet in the thirteenth century, the French influence in the Toledo Cathedral had considerably diminished. Note that the name Iocellinus, or Jocelinus, appears more frequently in obituaries from the Notre-Dame Cathedral in Paris. See M. [Benjamin Edme Charles] Guérard, *Cartulaire de l'église Notre-Dame*

Figure 1

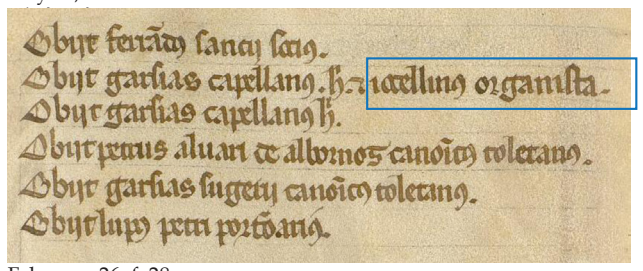
References to "organistae" in obituaries

Toledo 42-30

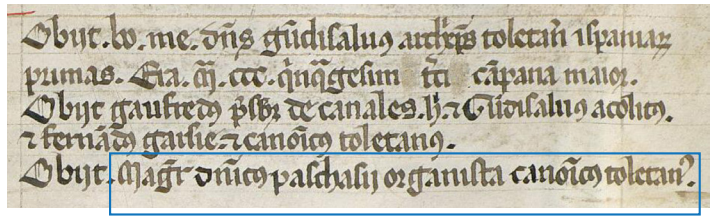
February 2, f. 16r



May 23, f. 65v

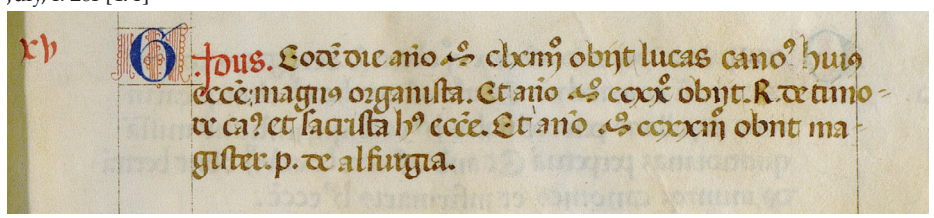


February 26, f. 28r



Tarragona 2121 / 362

July, f. 26r [47r]



de Paris, 4 vols., Collection des cartulaires de France, vol. 4-7, Paris: L'Imprimerie de Crapelet, 1850, IV, pp. 14, 106, 229.

latter's name even brings to mind Leoninus and Perotinus, the famous masters of polyphony associated with the Notre-Dame Cathedral in Paris;[8] Anonymous IV also calls them "magistri", describes Leoninus as an "optimus organista", and refers to Perotinus with the adjective "magnus".[9] Similarly, a certain "Lucas magnus organista", deceased in 1164, is also found in the Cathedral of Tarragona,[10] giving rise to the idea that the presence of organistae in twelfth-century Toledo would not have been an exception on the Iberian Peninsula of those times. Also the Zamora Cathedral was provided with an organista since the late twelfth century. The presence of organistae and polyphonic activity in the Toledo Cathedral during the initial decades of the thirteenth century should be viewed in relation to one of the most notable figures of the political and ecclesiastical scene of that time: Rodrigo Ximénez de Rada, intellectual, historian, diplomat, chancellor of King Fernando III and influential archbishop of Toledo between 1209 and 1247. Ximénez de Rada studied in Paris (probably between 1199 and 1203), where he obtained the degree of magister in theology.[11] According to his biographers, his time in Paris had a decisive effect on his intellectual training and future ecclesiastical and diplomatic career in Castile. In later years he made various other trips to France as diplomat and chancellor. Thus, Ximénez de Rada must have met Perotinus and Philip the Chancellor, and his patronage must therefore have played a crucial role in the introduction of French polyphonic music at the Toledo Cathedral. He is well acknowledged as having brought French Gothic architecture to Toledo.

8 According to the political historian John Benton, the name's diminutive form was employed as a sign of familiarity and even longevity. Cited in Craig Wright, *Music and Ceremony at Notre Dame of Paris, 500-1500*, Cambridge: Cambridge University Press, 1989, p. 284.

9 Fritz Reckow (ed.), *Der Musiktraktat des Anonymus 4*, 2 vols., Beihefte zum Archiv für Musikwissenschaft, Wiesbaden: Franz Steiner, 1967, I, pp. 46 and 82, respectively.

10 See Appendix.

11 Mario Crespo López, Rodrigo Jiménez de Rada. *Vida, obra y bibliografía*, Madrid: Biblioteca Virtual Ignacio Larramendi de Polígrafos, 2015, p. 6.

An inventory of goods of the Toledo Chapterhouse from the time of Archbishop Ximénez de Rada, dated 1234 and written in the vernacular Castilian, records that a certain "maestro Steuan el organista" had rented houses from the chapter in the city.[12] Ramón Gonzálvez Ruiz claims to have traced this person as a cantor (capiscol) of the Toledo Cathedral in documentation from 1257 and earlier.[13] Magister Steuan, however, was not "the cantor" of the cathedral, but rather one among the various specialised cathedral "cantores" in charge of performing sung Mass and Office.[14] More specifically, he was a canon occupying the third of the fifteen seats reserved to canons on the left side of the cathedral choir stalls (Dean's Choir).[15] By then, the proper cantor of the cathedral was Magister Domingo Pascual, who was not only a canon but also a chapter dignitary. Pascual was assigned the third of five seats reserved for the chapter dignitaries on the right side of the choir stalls (Archbishop's Choir) immediately next to the archbishop's throne. Magister Steuan el organista was of course required to descend to the centre of the choir, together with other members of the choir, in order to perform certain chants of the Mass and Office. It was the cathedral cantor (or rather his delegate, the succentor) who examined, and then accepted or rejected, those aspiring to sing in the choir, and who decided which of the singers were to perform on which day of the week and on which of the solemn festivities.

In 1250 Magister Steuan el organista had a Latin document signed on his behalf as "magister Stephanus organista".[16] The document is signed by

12 Toledo, Archivo Capitular, X.10.B.1.3, second column. The document is an inventory of the Chapter's property. Edited in *Ángel González Palencia, Los mozárabes de Toledo en los siglos XII y XIII*, 4 vols., Madrid, 1926-30, vol. prelim., pp. 163-172 (p. 168).

13 Gonzálvez, *Hombres y libros*, p. 688.

14 Cathedral documentation sometimes uses the same terminology to refer to 'the cantor' (the head and leader of the cathedral's liturgical organization, a dignitary position which involved administrative duties) and the 'cantores' (the clerics who formed a specialized group of singers within the cathedral choir).

15 Toledo, Archivo Municipal, 12.4.11; Toledo, Archivo Capitular, A.S.B.1.2a (20 April 1243). See Hernández and Linehan, *The Mozarabic Cardinal*, Figure 1.

16 Toledo, Archivo Capitular, E.11.F.1.1, "Ego magister Stephanus organista concedo, et iussi

12 cathedral chaplains, priests and canons, including the dean and the precentor. All of these signatures are autographs, the only exception being those of magister Steuan and a canon called Garsias, which suggests either that Magister Steuan was absent when the document was prepared or that he had become blind or suffered some other type of physical impediment due to his advanced age.[17]

Magister Steuan el organista appears to be mentioned in a thirteenth-century inventory of the cathedral as the donor of a proser.[18] Curiously, 'proser' was the term used to refer to the thirteenth-century polyphonic collection Madrid, Biblioteca Nacional, MS 20486 in later inventories of the Toledo Cathedral.[19]

Yet the critical issue here would be to determine what the specific functions of a thirteenth-century cathedral organista were. It has long been acknowledged that the term "organum" and its derivatives are somewhat polysemic. From the twelfth century onwards the terms "organum", "organista", "organizator", "organizare" and "ars organizandi" were applied indiscriminately to vocal polyphony and organ playing. Twelfth-

scribere per me" (I, master Steven organista, agree, and order [that my signature] be written for me). The document is an agreement between the Chapter and Doña Ora Mejor and Doña Gracia concerning certain shops and houses on the Calle de la Zapatería.

17 Also noteworthy is the fat that the delegated signature of Magister Steuan appears to have been inserted between two other signatures that had been written previously.

18 Madrid, Archivo Histórico Nacional, Sección Códices, 987B (*Liber privilegiorum Ecclesiae toletanae*), ff. 89v-90, "Dos proseros, et otro que dió maestro Esteuan de nueuo". The inventory was drafted during the pontificate of Archbishop Sancho (1251-1261), Infante of Castile. Partially edited in F. de B. de S. R., "Inventario de la Catedral de Toledo, hecho en el siglo XIII", *Toletum*, 7 (1920), pp. 121-125, and thoroughly analysed in Gonzálvez, *Hombres y libros*, pp. 661-691.

19 Gonzálvez suggests that Magister Esteuan's proser could perhaps be identified with Toledo 35-10 (early thirteenth century), the only Toledan manuscript of the period fitting the features of a regular proser. Gonzálvez, *Hombres y libros*, p. 688. As for the Madrid manuscript, see Juan Carlos Asensio Palacios (ed.), *El Códice de Madrid, Biblioteca Nacional Ms 20486. Polifonías del siglo XIII*, text edition by Julián Paz, Madrid: Editorial Alpuerto, 1997, pp. 14-18.

and thirteenth-century organum treatises, such as the famous *Ad organum faciendum*, the Montpellier Treatise, or the Vatican Organum Treatise, employ the terms organizator and organizatore to refer to the person who performs polyphony on plainchant melodies.[20] Although we have no treatise from that time specifically or exclusively meant for organ players, the *Tractatus de mensura fistularum* by Eberhardus Frisingensis, a twelfth-century treatise on the fabrication of organ pipes, already contains expressions such as "ad organizandi artem" or "a peritoribus organistis", in this context clearly referring to the art of organ playing.[21] This duality of vocal and instrumental polyphonic practice is clearly expressed in the Exeter ordinal (1337). Concerning Sanctus sequels, the ordinal prescribes: "Ex licentia, si placet senioribus [...] ad Missam post Sanctus poterunt organizare com vocibus vel organis".[22]

Moreover, the pedagogical methodology of the Vatican Organum Treatise happens to be identical to that of the fifteenth-century *Fundamenta organizandi* for organ players, that is, a collection of discant formulas to be memorized, which are classified and disposed according to the intervals

20 Irving Godt and Benito V. Rivera (eds.), "The Vatican Organum Treatise: A Color Reproduction, Transcription, and Translation", in *Gordon Athol Anderson (1929-1981) in memoriam*, 2 vols., Henryville: Institute of Mediaeval Music, 1984, II, pp. 264-345; Steven C. Immel, "The Vatican Organum Treatise Re-examined", *Early Music History*, 20 (2001), pp. 121-172; Frieder Zaminer, *Der Vatikanische Organum-Tractat (Ottob. lat. 3025). Organum-Praxis der frühen Notre Dame-Schule und iher Vorstufen*, Tutzing: Verlegt bei Hans Schneider, 1959.

21 This treatise contains further expressions such as "organico instrumento". Martin Gerbert (ed.), *Scriptores ecclesiastici de musica sacra potissimum*, 3 vols. St. Blaise: Typis San-Blasianis, 1784 (reprint ed., Hildesheim: Olms, 1963), II, pp. 279-82. A very similar anonymous treatise, entitled *De mensura fistularum in organis*, is also edited in the same volume (pp. 283-87). Judging from the complaints expressed by Ailred of Rievaulx in his *Speculum caritatis*, a work purportedly written at the request of St Bernard himself, the use of the organ in church seems to have become the normal practice by the twelfth century. Jacques Paul Migne (ed.), *Patrologiae cursus completes*, Series latina, Paris, 1850, vol. 195, cols. 571-2 ("Unde in Ecclesia tot organa, tot cymbala?").

22 Bishop John Grandisson's ordinal of 1337. John n. Dalton (ed.), *Ordinale Exon*, 4 vols., Henry Bradshaw Society, vols. 37, 38, 63, 79, London, 1909-40, I, p. 20.

of the tenor line.[23] The method could not be simpler: the *organizator* had to memorize all the discant formulas in order to be able to apply them spontaneously according to the motion of a tenor line (a plainchant melody). The Vatican Organum Treatise would therefore perfectly match the needs of thirteenth-century organ players. In fact, the verbal part of the treatise contains hardly any expression suggesting that the treatise was limited only to the use of singers. In his edition and translation of the treatise, however, Irving Godt added some words to the translation in order to relate it to singing. To cite just one example, he translated "dulcem organizandi modulationem" as "sweet harmony of organal singing".[24]

Further evidence of this close connection between vocal and instrumental polyphonic practice is found in the documentation of the Burgos Cathedral. In 1222 a certain "P. Leonis, burgensis magister in organo" signed a document as the scribe of Bishop Mauricio of Burgos.[25] Significantly, before 1250 the cathedral chapter officially established a twofold salary for a "doctor in organo": (i) 40 maravedís, the greatest portion of the salary, were paid for his position as a doctor in organo, and (ii) an 'extra' payment of 20 maravedís was made for his service of playing the organ during the most solemn celebrations. Therefore, the text clearly shows that playing the organ was not the organista's main occupation:

> Ordinamus quoque, quod ad decus et decorum burgensis ecclesiae nouimus pertinere, ut doctor in organo semper sit in eadem ecclesia per capitulum eligendus, cui praestimonium quadraginta morauetinorum adsignare mandamus; et tam ad pulsanda organa consuetis solemnitatibus, quam reparanda, aliud uiginti morauetinorum adsignetur, a Sacrista burgensi tenendum ad hunc usum utiliter dispensandum.[26]
>
> *Translation*
> As we know that this is proper to the decorum and ornament of the church of Burgos, we also order that the doctor in organo of this church be at all times elected by the chapter, to whom we order be allotted a salary of 40 maravedís; and, both for playing the organ in the usual solemnities and for repairing it, [we order] that he be allotted another 20 maravedís, which is to be collected by the sexton of Burgos and effectively paid out for such purpose.

But the fact that the paragraph begins by stating that the doctor in organo's function belonged to the "decus et decorum" of the Burgos Cathedral strongly suggests that his main occupation actually had to do with polyphonic performance. The expression "in organo" is indeed found in the documentation of the Cathedral of Notre Dame in Paris, as well as in thirteenth-century organum treatises, such as the Vatican Organum Treatise. To quote only two examples: in Notre Dame a payment was made in 1208 to "quidam clericorum qui ad missam responsorium vel alleluia in organo triplo seu quadruplo decantabit",[27] and, as stated in the Vatican Organum Treatise, "[...] est maxima difficultas in organo".[28]

Unlike Magister Steuan el organista in Toledo, the Burgos doctor in organo was apparently not a beneficiary of the cathedral, although he was to be elected by the cathedral chapter. His salary (40 + 20 maravedís) was

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23 For an edition of Conrad Pauman's *Fundamentum Organisandi*, see Bertha Antonia Wallner (ed.), *Das Buxheimer Orgelbuch*, 3 vols., Kassel: Bärenreiter, 1958.

24 Godt and Rivera (eds.), "The Vatican Organum", p. 298.

25 "Ego P. Leonis burgensis, magister in organo, [...] scripsi et signavi". José Manuel Garrido Garrido (ed.), *Documentación de la Catedral de Burgos (1184-1222)*, Fuentes medievales castellano-leonesas, Burgos, 1983, doc. 543, pp. 380-382. Already noticed by Manuel Martínez Sanz, *Historia del templo de la Catedral de Burgos*, Burgos: Anselmo Revilla, 1866, p. 265.

26 Constitutions of the Burgos Cathedral, drafted before 1250 and confirmed in 1252 by Pope Innocent IV. Document edited in Demetrio Mansilla, *Iglesia castellano-leonesa y Curia romana en los tiempos del Rey San Fernando*, Madrid: Instituto Francisco Suárez, 1945, no 77, pp. 358-369: p. 362. See also *Catálogo del Archivo Histórico de la Catedral de Burgos*, Burgos: Caja de Ahorros del Círculo Católico, 1998, nos. 682-686, pp. 203-204.

27 Paris, Bibliothèque nationale de France, fonds latin 8185cc, f. 142; edited in Guérard, *Cartulaire*, I, p. 358; cited in Wright, *Music and Ceremony*, p. 370.

28 Godt and Rivera (eds.), "The Vatican Organum", p. 297.

relatively low, especially when compared with that of the cathedral cantor (400 maravedís).[29] The Burgos cantor in the time of magister in organo P. Leonis, Pedro Díaz de Villahoz, was indeed a man rich enough to ensure his burial in a chapel in the cathedral's eastern end, which he himself had founded and funded.[30] Yet in order to contextualize properly the salary of the Burgos doctor in organo, it is important to note that the canons of the Burgos Cathedral received 80 maravedís, the portionarii or socii 40 maravedís, and the minor beneficiaries 20 maravedís. Accordingly, the total salary of the doctor in organo was midway between those of a portionarium and a canon. Significantly enough, the salary of the Burgos doctor in organo was almost the same as that of the "maestro en organo" of the Salamanca University (50 maravedís), who, by the way, had the lowest salary among all the Salamanca professors (a teacher of grammar, for example, was to be paid 100 maravedís).[31] We will see below that both the salary and the terminology referring to this position suggest that the organistae in Burgos and Salamanca had the same type of pedagogical function; the former at the cathedral school, the latter at the university (an institution which was closely linked to the Salamanca Cathedral). The term doctor found in the documentation of the Burgos Cathedral is to be understood, not as the highest academic rank of the university, but rather as a mere teacher of the cathedral school (doctor, from the Latin verb doceo/docere, to teach, to show).

From this, it follows that the organistae in Burgos and Toledo formed part of the cathedral staff in quite different ways. While the Toledan magister organista was a choir cantor (specialised in polyphonic performance, we may suppose), as well as a cathedral beneficiary, which implied a relatively high salary and equally high social status, the Burgos doctor in organo was neither a cathedral beneficiary nor was likely to form part of the cathedral choir; his task, however, was that of training a select group of cathedral clerics and choirboys in the art of polyphonic performance.

29 Mansilla (ed.), *Iglesia castellano-leonesa*, p. 360.

30 Chapel of St Nicolas. See René Jesús Payo Hernanz (ed.), *La Catedral de Burgos. Ocho siglos de Historia y Arte*, Burgos: Diario de Burgos, 2008, pp. 174-175.

31 See below.

Like Ximénez de Rada, Bishop Mauricio of Burgos also studied in Paris.[32] He is well known to art historians as having brought French architects to Burgos to build the new Gothic cathedral in the most up-to-date Parisian style.[33] The works to build the new cathedral were commenced precisely in 1221 (the earliest known reference to a magister in organo in Burgos dates from 1222). It would therefore seem that Bishop Mauricio intended to introduce Burgos not only to the new Gothic architectural style, but also to the music linked to Gothic buildings. The earliest known manuscript from Burgos transmitting polyphonic music does not come from the cathedral itself but from the church of San Estevan, a collegiate church located on the east side of the castle hill.[34] Although this source appears to transmit a somewhat local tradition,[35] Parisian polyphony from the early thirteenth century is indeed well represented in the Las Huelgas Codex, a manuscript compiled only a 15-minute walk away from the Burgos Cathedral in the fourteenth century.

32 Luciano Serrano, *Don Mauricio, obispo de Burgos y fundador de su catedral*, Madrid, 1922, p. 21. Teresa Witcombe is currently working on a new biography of Bishop Mauricio. Teresa Witcombe, *Mauricio of Burgos: bishop, patron and statesman in thirteenth-century Castile*, Ph.D. diss., University of Bristol (work in progress).

33 Henrik Karge, *La Catedral de Burgos y la arquitectura del siglo XIII en Francia y España*, Valladolid, Junta de Castilla y León, 1995; Payo Hernanz (ed.), *La Catedral de Burgos*.

34 The fragmentary manuscript is now preserved in the Burgos Cathedral, Archivo de la Catedral, Códice 61. Although its neumatic notation (so-called Aquitanian) without a staff would suggest quite an early dating, the pen-work decoration points towards the third quarter of the thirteenth century. For the provenance of the fragment, see Esther Pardiñas de Juana, *San Esteban de Burgos, una iglesia y un archivo*, Burgos: Caja de Ahorros del Círculo Católico de Burgos, 2006, p. 253.

35 The fragment contains a collection of monophonic sequences, some of them concordant with the Las Huelgas Codex, and three polyphonic pieces: a two-part *Ave maris stella*, a two-part *Agnus dei*, and a three-part Gloria trope (*Spiritus et alme*). The latter, also concordant in the Las Huelgas Codex and in two other Castilian manuscripts (now in Zamora and Madrid), would appear to be a local composition.

Figure 2

Organ depiction in the Burgos Cathedral, Portada del Sarmental

On the other hand, Bishop Mauricio's interest in the organ seems to have been reflected in the decoration of one of the cathedral's main doors: the Portada del Sarmental (see Figure 2). Carved and installed in the decade of the 1230s, this door originally adjoined the recently built episcopal palace on the west, and was therefore conceived as a sort of private access through the bishop and the canons could enter the choir.[36] Bishop Mauricio himself is depicted at the centre of the door, and the depiction of the organ shows details of such realism that we may presume that the Burgos Cathedral had a similar instrument around 1230-40 (note that in this depiction the organ is not played by an angel and does not form part of any allegoric scene such as that representing the Liberal Arts). A similar organ depiction found on the western-central façade of the León Cathedral (Figure 3, dated ca. 1270), serves to give a very precise idea of the evolution of medium-size positive organs within a span of approximately forty years.[37]

A document dated 1308 from the Burgos Cathedral provides us with interesting clues as to the placement of the large organ inside the church. In that document, Bishop Rodríguez ordered that five chaplains were to sing for the bishop's soul in the chapel "where the church's organ stands" and where altars for St Anne and St Bartholomew were to be built.[38] According to art historian Henrik Karge, after 1308 St Ana's Chapel was located in

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36 Rocío Sánchez Ameijeiras, "La Portada del Sarmental de la Catedral de Burgos. Fuentes y fortuna", *Materia: Revista d'art*, 1 (2001), pp. 161-198.

37 For more on this facade of the Léon Cathedral, see José María Azacarate, *Arte gótico en España*, Madrid: Cátedra, 1990, pp. 162-170.

38 "çinco capellanes que canten por nuestra alma en la capiella que uos assignamos, que es sso [están] los órganos en nuestra eglesia, en que fagades dos altares: el uno de ssanta Agna e el otro de ssant Bartolomé". Archivo de la Catedral de Burgos, Vol. 18, f. 519. The document reproduces Bishop Pedro Rodríguez's foundation chart of five chaplaincies that were to be held by five chaplains, assisted by ten of the youngest cathedral choirboys ("diez moços pequennos del coro").

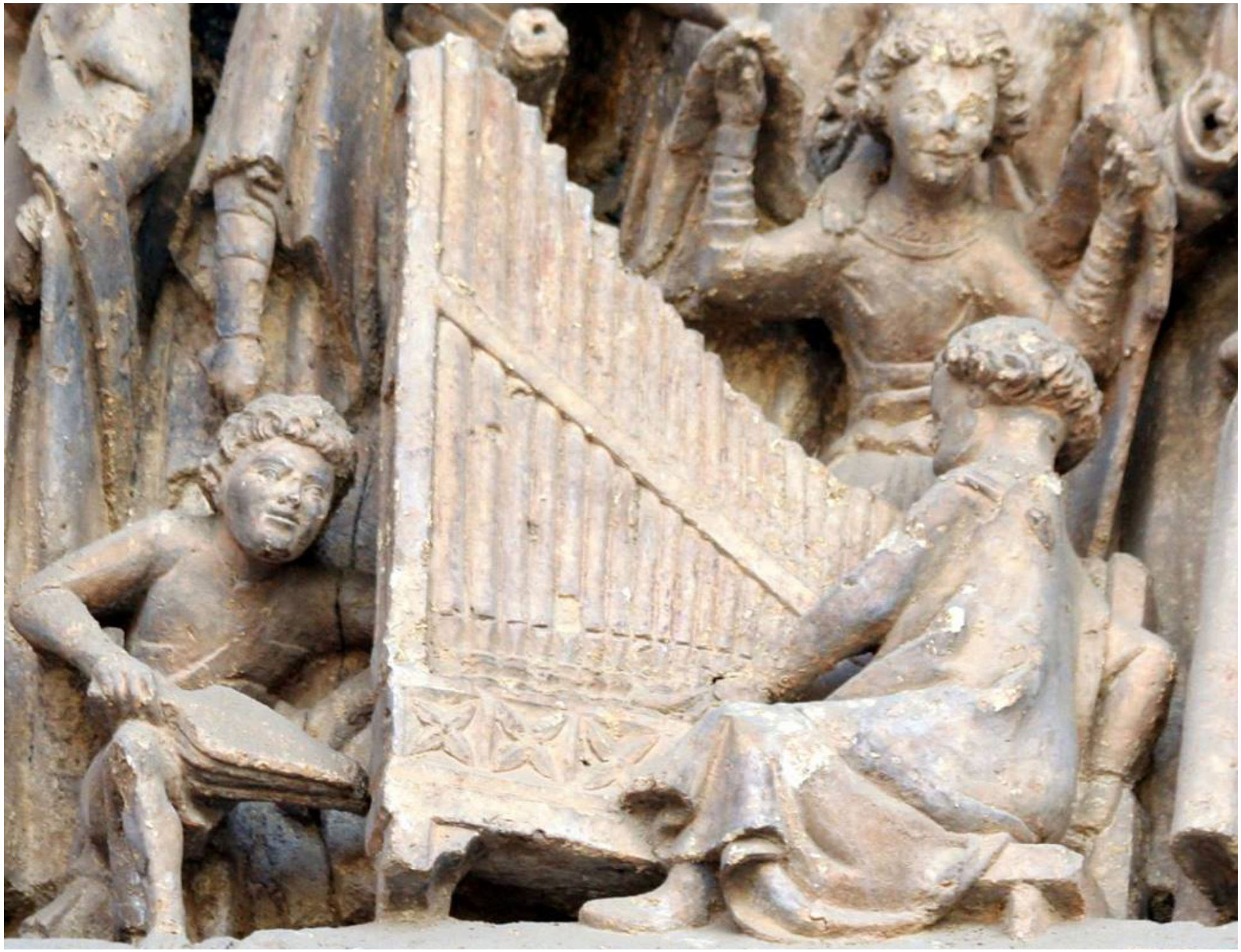

Figure 3
Organ depiction in the León Cathedral, western-central façade

the angle formed by the nave and the north arm of the transept (see Figure 4).[39] We know that the large organ of the Barcelona Cathedral already stood in a very similar place by 1259, in the cathedral's north nave, close to the transept.[40] This must have had interesting spatial consequences for a hypothetical choir-organ alternatim performance, given that the choir stalls of medieval Iberian cathedrals were usually placed in the chancel.[41] Nonetheless, we cannot rule out the possibility that the chancel choir was provided with a small portative or positive organ like the one depicted in the Portada del Sarmental of the Burgos Cathedral. Also interesting to note is that in the earliest documented references to the organ in a liturgical context in the Burgos Cathedral (as occurs in the Toledo Cathedral), the organ is mentioned in connection with solemn processions.[42] In those processions, the clerical choir, the organ and the church bells resounded, sometimes simultaneously, while the most sumptuous treasures of the church were exhibited before the eyes of the people.

The classification of polyphony and organ music as a sort of object that belonged to the cathedral's "decus et decorum" is certainly suggestive. In other words, this kind of music was viewed as yet another of the "ornamenta ecclesiae" that served to increase the solemnity of religious and political ceremonies (curtains, gold fringes, silken coverings, veils, tapestries, floor coverings, cases, phylacteries, candelabra, crosses, chalices, banners, books). This brings to mind the letter by Abbot Baudri of Bourgueil (†1130), in which he related the sound of the organ to the "aurea vel argenta vel

39 Karge, *La Catedral de Burgos*, p. 57.

40 Josep Baucells, "Les notícies més antigues sobre els orgues de la Catedral de Barcelona", *Medievalia*, 8 (1988), pp. 41-74.

41 Eduardo Carrero Santamaría, "Entre el transepto, el púlpito y el coro. El espacio conmemorativo de la Sibila", in *La Sibila. Sonido. Imagen. Liturgia. Escena*, edited by E. Carrero Santamaría and M. Gómez Muntané, Alpuerto, 2015, pp. 207-260.

42 A constitution issued in 1377 by the bishop of Burgos, Domingo de Arroyuelo, refers to the processions of solemn feast days as "processiones de capas e órganos e cera e campanas mayores". Archivo de la Catedral de Burgos, Vol. 7 parte 1, ff. 228-230.

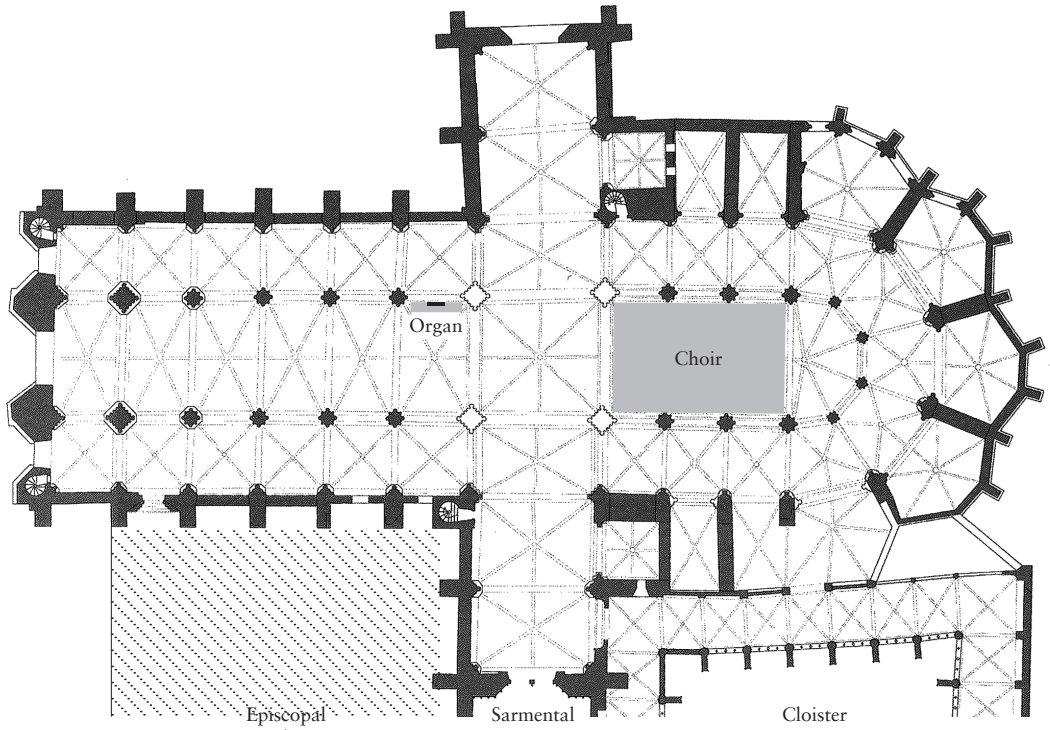

Figure 4

The Burgos Cathedral ca. 1300 (adapted from H. Karge)

serica ornamenta ad laudem Dei".[43] The subject of ornamenta ecclesiae was long discussed and theorized by medieval churchmen and liturgists,

43 Véronique Gazeau, "Note sur l'orgue de Fécamp. Extrait de la lettre de Baudri de Bourgueil aux moines de Fécamp", *Cahier des Annales de Normandie*, 35 (2009), pp. 347-351: p. 349. In 1345 the bishop of Barcelona urged the repair the church organ, because "[organa] multum decorant divinum officium" (Baucells, "Les notícies", p. 69). With a view to "embellishing" the Diurnal Office ("officium diurnum decorari"), in 1343 the cathedral chapter of Sigüenza decided to increase the number of choirboys and to contract the services of a "magister in canto organico" to train the boys in the art polyphonic singing see David Catalunya, *Music, Space and Ritual in Medieval Castile, 1221-1350*, Ph.D. Dissertation, Universtät Würzburg, 2016, Chapter 11.

and had a wide tradition, which was not exempt from controversy. For the purpose of this study, reference must now be made to Abbot Suger of St Denis (1081-1151) and Guillaume Durand (1230-1296). The former is of special interest, given that he promoted one of the earliest and most influential Gothic buildings: the royal abbey church of St Denis, near Paris.[44] Abbot Suger was a passionate advocate of the use and exhibition of luxurious objects in liturgy. The extent to which he relished describing and justifying the sumptuous ornamenta ecclesiae in his writings about the abbey, often telling us how much they cost and how much gold and how many gemstones they contained, continues to strike modern scholars. Suger believed that the physical beauty of a religious building and its liturgical ornaments reflected the divine beauty. He expressed how the contemplation of the most lavish pieces of worldly art moved him to "worthy meditation" (honesta meditatio), "transferring that which is material to that which is immaterial".[45] We must not forget, however, that behind this aesthetical conception was a need to exhibit power, given Suger's crucial role as theoretician and propagandist of the French monarchy. Some scholars have argued that he owed his vision of art, society and politics to his readings of the *Celestial Hierarchy*, a mystical treatise by a fifth-century theologian known to us as Pseudo-Dionysius the Areopagite, but thought by Suger to be St Denis himself, whose relics were safeguarded in his abbey.

As I see it, the possible influence of Abbot Suger and the royal abbey of St Denis on Bishop Mauricio would explain some of the initiatives undertaken by the Castilian prelate in Burgos. In November 1230, only nine years after Bishop Mauricio laid the first stone of the new Gothic structure in a ceremony presided over by King Fernando III, and as soon as its eastern end was finished and the new choir stalls were installed there, the prelate issued

44 His writings about the abbey are edited and translated into English in Erwin Panofsky, *Abbot Suger on the Abbey Church of St-Denis and its Art Treasures*, Princeton University Press, 1946 (reedited in 1979).

45 Panofsky, *Abbot Suger*, pp. 62-63.

a set of new constitutions for the cathedral choir.[46] Significantly, Mauricio's constitutions begin with a sort of short prologue, in which the bishop explicitly cites Dionysius' *On the Celestial Hierarchy* and *On the Ecclesiastical Hierarchy*. To my knowledge, these citations are absolutely unique and exceptional among medieval cathedral constitutions in Castile. Moreover, certain expressions found in Mauricio's text recall Suger's justification of sumptuousness. For example, Mauricio stated that "those who are participants in the work and service of the church rites ought to rejoice in the consolation of the things of this temporary world".[47] He also promoted initiatives aimed at "increasing the honour of the church",[48] such as the daily incensing and illumination of the choir and the altar.

The thirteenth-century liturgist Guillaume Durand also argued in favour of sumptuous ornamenta ecclesiae very much in line with Suger.[49] Durand writes: "on feast days the curtains are spread out in churches to decorate them, so that through visible ornaments, we will be moved to the invisible ones".[50] Throughout his chapter on the ecclesia ornamenta, he explains extensively how and why "on the principal feast days the treasury of a church is opened up publicly".[51] One of Durand's main arguments revolves

46 Edited in Serrano, *Don Mauricio*, no. 13, pp. 143-147.

47 "participes sunt laboris et servicii ecclesiastici gaudere debent rerum temporalium consolatione". Ibid., p. 146.

48 "Volentes honorem ecclesie ampliare". Ibid., p. 146.

49 Anselme Davril and Timothy N. Thibodeau (eds.), *Guillelmi Duranti, Rationale divinorum officiorum*, 2 vols., Corpus Christianorum, Continuatio Medievalis, vol. 140 and 140A, Turnhout: Brepols, 1995-98. English translations available in Timothy M. Thibodeau (ed.), *The Rationale divinorum officiorum of William Durand of Mende: A New Translation of the Prologue and Book One*, Columbia University Press, 2007; Timothy M. Thibodeau (ed.), *On the Clergy and Their Vestments: A New Translation of Books 2-3 of the Rationale divinorum officiorum*, University of Scranton Press, 2010; Timothy M. Thibodeau (ed.), *Rationale IV: On the Mass and Each Action Pertaining to It*, Turnhout: Brepols, 2013; Timothy M. Thibodeau (ed.), *Rationale V: Commentary on the Divine Office*, Turnhout: Brepols, 2015.

50 He continues by describing the symbolism of the curtains' colours. *Rationale*, 1.3.39.

51 *Rationale*, 1.3.42.

around the effects of admiration and amazement that these luxurious and exotic objects inspire in the people viewing them. For example, Durand reports that "in some churches they hang ostrich eggs, or something of this sort, which cause wonderment since they are so rarely seen, so that people are drawn to church and greatly touched by this sight".[52] Medieval literature suggests that organ music was viewed in a similar way. It is thus described in Troyes' *Lancelot* (ca. 1170):

> qu'aussi con por oïr les orges
> vont au monastier à feste anuel
> à Pentecoste ou à Noël les
> janz acostumeent.[53]
>
> *Translation*
> just as, for hearing the organ, people
> are used to going to the monastery
> on the annual feast of Whit or
> Christmas.

Indeed, Durand also refers to the organ. In his chapter *On the Sanctus*, he states: "fittingly, in this singing in unison of Angels and men,[54] sometimes the organ resounds loudly".[55] The various cross-references made throughout the entire *Rationale* to the discussion on the organ in the chapter *On the Sanctus* are a clear indication that Durand viewed the organ as an important

52 *Rationale*, 1.3.43. Jèssica Pi classifies this 'rareness' within the semantic field of the "aesthetics of sumptuousness". Jèssica Jaques Pi, *La estética del románico y el gótico*, Madrid: A. Machado Libros, 2003, pp. 54-56 and 239.

53 Peter Williams, *A New History of the Organ. From the Greeks to the Present Day*, Indiana University Press, 1980, p. 47.

54 The chapter begins "The Church hopes to be in the company of Angels and Archangels [...] so immediately after the Preface, she joins herself with the angelic chants, singing: 'Holy, Holy, Holy' etc." (*Rationale*, 4.34.1).

55 *Rationale*, 4.34.10.

sonic element often present in liturgy. These cross-references, especially those found in the chapters *On the Chant* (*Rationale*, 5.2.66: "the organ was discussed in ...") and *On the bells* (*Rationale*, 1.4.15: "the church also has an organ, about which we will speak in ..."), suggest that, where the organ is concerned, what is said in the chapter *On the Sanctus* also applies to other chants and liturgical rituals. Durand's thoughts on the 'neumatization' of sequences (see below) and the use of the organ to accompany chant are very much in line with the role he attributes to the ornamenta ecclesiae and his Augustinian concept of the sensorial nature of music. Durand explains how "the practice of singing in church was established to move the senses, not the spirit, so that those who were not goaded by the words would be moved by the sweetness of the melody".[56] In the twelfth and thirteenth centuries, the sound of the organ might have contributed significantly to this. Castilian devotional literature from the very early thirteenth century also contains references to the organ. Gonzalo de Berceo's *Milagros de Nuestra Señora* (ca. 1200-1225) includes several passages in which the poet demonstrates quite a high degree of musical knowledge. In an allegorical description of the song of the birds, he makes explicit references to both the organ and polyphonic practice by way of a poetic intermingling of concepts:

> 7 Yaziendo a la sombra perdí todos cuidados,
> udí sonos de aves dulçes e modulados;
> nunqua udieron omnes órganos más temprados,
> nin que formar podiessen sonos más acordados.
>
> 8 Unas tenién la quinta e las otras doblavan,
> otras tenién el punto, errar no las dexavan;
> al posar, al mover, todas se esperavan,
> aves torpes nin rroncas hi non se acostaban.

56 Durand continues by paraphrasing St Augustine's *Confessiones* (10.33.50): "The Church approves the custom of singing so that by indulging the ears of the weaker spirits, they can be moved to a deeper piety" (*Rationale*, 2.2.4).

9 Non serie organista nin serie violero,
nin giga nin salterio nin mano de rotero
nin estrument nin lengua nin tan claro vocero
cuyo canto valiesse con esto un dinero.

26 Las aves que organan entre essos fructales,
que an las dulçez vozes, dizen cantos leales,
estos son Agustino, Gregorio, otros tales
quanto qe escribieron los sos fechos reales.[57]

Approximate translation

7 Reclining in the shade, all cares faded away,
I heard sweet and modulated sounds of birds;
Never had man heard more well-tuned organs,
nor had such consonant sounds ever been formed.

8 Some held the fifth and others doubled [the pitch],
others held the tone, none were allowed to err;
whether still or in movement, all were paying close attention to each other,
clumsy or hoarse birds dared not approach.

9 No organ player, no fiddle player,
no giga,[58] no psaltery, no hurdy-gurdy player's hand,
no instrument, no tongue, no voice however clear,
had a song, compared with this, worth any money at all.

26 The birds perform polyphony (organan) in these fruit trees,
who have these sweet voices, sing songs of loyalty,
these are Agustinus, Gregory, and others
who wrote about their true deeds.

57 Brian Dutton (ed.), *Los Milagros de Nuestra Señora*, Gonzalo de Berceo Obras Completas, London: Tamesis Book Limited, 1971, vol. 2: strophes 7-9, p. 30; strophe 26, p. 32. A further reference to the birds' polyphony is found on p. 68: "estos son los árbores [...] en cuia sombra suelen las aves organar".

58 The giga was a bowed musical instrument similar to a fiddle.

In strophe 7, Berceo compares the sweet and modulated song of the birds with the sound of a well-tuned organ. In strophe 8 his description of the birds' song shows polyphonic features: they sang different pitches simultaneously (unisons, fifths and octaves, like in a blokwerk organ) and were constantly paying close attention to each other in order to maintain perfect coordination ("al posar, al mover, todas se esperavan"). The fact that they were not allowed to make mistakes could be interpreted as an allusion to the role of a cantor conducting the choir.[59] In strophe 9, however, the poet most likely employs the term organista to refer to an organ player, since the same strophe mentions a fiddle player and other instruments. But in strophe 26, he uses the verb "organar" (the vernacular Castilian equivalent of the Latin organizare) in connection with the act of singing:[60] the birds sing songs of loyalty and "do organaum" (organan) with sweet voices.[61]

59 In a letter to the monks of Fécamp, Abbot Baudri of Bourgueil (†1130) compared the sound of a blokwerk organ with that of a mixed voice choir in which children (choirboys) and elder and younger clerics sang together: "Ibi siquidem instrumentum vidi musicum, fistulis aeneis compactum, quod follibus excitum fabrilibus suavem reddebat melodiam, et per continuam diapason, et per symphoniae sonoritatem, graves, et medias, et acutas voces uniebat, ut quidam concinnentium chorus putaretur clericorum, in quo pueri, senes, juvenes, jubilantes convenirent et continerentur: organa illud vocabant". Gazeau, "Note sur l'orgue", p. 349.

60 The verbs dezir and cantar also apply to organ playing. While in Berceo's *Milagros*, "Las aves que organan [...] dizen cantos leales", in Juan Ruiz's *Libro de buen Amor* (ca. 1322-1330), "los órganos ý dizen chançones e motete". Alberto Blequa (ed.), *Libro de buen amor, Arcipreste de Hita*, Clásicos y Modernos, vol. 7, Barcelona: Crítica, 2001, p. 208, verse 1234. The use of the verbs 'to say' and 'to sing' applied to organ playing was very widespread in Europe throughout the Middle Ages. To cite another example: "Item dabitur Organistae unus grossus, qui cantabit in organis ad dictam missam S.Erasmi, et Calcanti organa dimidius grossus" (Merseburg, 1428). Wolfgang Reuter, *Urkundenbuch mit Regesten bedeutender Akten der Stadt Geithain und ihrer Umgebung 1097 bis 1539*, Geithain, 2014.

61 The Castilian *Libro de Alexandre* (first third of the thirteenth century) also uses make use of the verb organar (or organear). Strophe 2395: "Sedie el mes de mayo coronado de flores / afeytando los campos de diversos colores / organeando las mayas e cantando damores" (In the month of May crowned with flowers / strewing the fields with multiple colors / May Queens 'singing

Exactly the same terms are found, with an even clearer meaning and more realistically related to the actual soundscape of medieval churches, in the twelfth-century *Roman de Brut*:

> quant li messe fu commensié
> qui durement fu essaucié
> mout oïssiés orgues sonner
> et clercs chanter et orgener.[62]
>
> *Translation*
> when Mass was begun,
> which was executed rigorously,
> the organ could be heard playing loudly,
> and the clerics singing and performing polyphony.

The organ's close connection with the practice of monophonic and polyphonic chant and mensural music is also well attested in music theory treatises. In his *Ars musica* (ca. 1280), Fray Gil de Zamora, a Franciscan scholar who was extremely influential in Alfonso X's court and to whom the king entrusted the tutorship of his son, Sancho IV,[63] wrote that the organ was "the only instrument that is used in church in various chants and proses, sequences and hymns".[64] Guillaume Durand's affirmation that, "because

polyphony' and songs of love). Francisco Marcos Marín (ed.), *Libro de Alexandre*, Madrid: Alianza Editorial, 1987.

62 Williams, *A New History*, p. 47.

63 Fray Gil de Zamora studied in Paris and Salamanca between 1273 and 1278. An edition with French translation of his treatise on music is available in CSM 20. For more on Gil de Zamora and his work, see Cándida Ferrero Hernández, "Nuevas perspectivas sobre Juan Gil de Zamora", *Studia Zamorensia*, 9 (2010), pp. 19-33; Don Michael Randel, "La teoría musical en la época de Alfonso X el Sabio", *Revista de musicología*, 10/1 (1987), pp. 39-52.

64 "Et hoc solo musico instrumento utitur ecclesia in diuersis cantibus et prosis, in sequentiis et in hymnis", CSM 20, p. 108. With respect to the original authorship of Gil de Zamora's passage on the organ (Bartholomeus Anglicus' *De Proprietatibus* [19.132] contains the same passage),

the praises of eternity cannot be fully echoed in human words, therefore, some churches mystically neumatize (mistice neumatizant) the sequences without any words, or at least some of their verses",[65] provides us with very interesting clues about the context and symbolism of the chant-organ alternatim practice.

Sequences, which Gil de Zamora affirms were performed with the organ, are among the chant repertoire most often transmitted in mensural notation throughout the late thirteenth and the fourteenth century. The Las Huelgas Codex, for example, preserves a very substantial collection of polyphonic and monophonic sequences in mensural notation. Interestingly, in 1412 Prosdocimo de Beldomandis explained the role of organ playing in the origins of mensural music as follows:

> sciendum est quod antiqui ante inventionem cantus mensurati quendam habebant modum cantandi in cantu plano quem modum organicum appelabant, quoniam ipsum acceperant ab organorum pulsatione. Modus ergo iste erat quod non pronuntiabant omnes figuras cantus plani sub eodem valore sed aliquas elongabant et aliquas abreviabant secundum ipsarum figurarum divisas dispositiones et secundum diversitatem ligaturarum cum caudis vel sine caudis et ab illis diversitatibus sumpsit originem cantus mensuratus.[66]

see Michel Robert-Tissot's Introduction in CSM 20, pp. 27-28. See also Martín Páez Martínez, "Influencia de San Isidoro en Gil de Zamora: los instrumentos musicales en el capítulo 17 del Ars Musica", *Studia Zamorensia*, 13 (2014), pp. 173-183: p. 181.

65 *Rationale*, 4.22.3. See also Lori Kruckenberg, "Neumatizing the Sequence: Special Performances of Sequences in the Central Middle Ages", *Journal of American Musicological Society*, 59/2 (2006), pp. 243-317.

66 Claudio Sartori, *La notazione italiana del trecento*, Florence, 1938, p. 64. See also F. Alberto Gallo, "La tradizione dei tratti musicali di Prosdocimo de Baldemandis", *Quadrivium*, 6 (1964), pp. 57-82.

Translation

one must know that before the invention of mensural music, the antiqui had a certain way of singing plainchant which they called the 'modus organicus' because they had derived it from the playing of the organ. The method consisted of not performing all the notes of the plainchant in the same rhythm, but lengthening some and shortening others according to the different groupings of the notes and according to the difference in the ligatures, some having stems and others not. And from observing these distinctions, mensural music had its origin.[67]

Returning to the possible pedagogical role of the Burgos doctor in organo, it is worth noting that his double function, probably as a music teacher and as an organ player, recalls that of the magister claustralis in the Toledo Cathedral (the music teacher of the choirboys and of the clerics; claustrero, in the vernacular Castilian). Nonetheless, it was not until much later that the Toledo Cathedral officially established his functions and salary by way of a constitution. The *Constitutiones* of 1357 by Archbishop Blas Fernández of Toledo stipulate that the magister claustralis is entitled to receive an extra salary for playing the organ:

> Ad officium magistri claustralis pertinet docere et instruere pueros seu clericellos chori, et alios beneficiatos ecclesie in cantu et vsu ecclesie diligenter, et eorum defectus seu errores circa officium etiam choro corrigere et emendare [...]. Item, ad ipsum claustralem pertinet, si ad id eruditus sufficiens existat, pulsatio organorum, et pro onere pulsationis huiusmodi, centum de refectorio et tecentos sexaginta et quinque de fabrica ecclesie morapetinos [...] et pro onere claustri decem denarios diebus singulis percipiat, prout in constitutione de portione quotidiana habetur.[68]

67 Translation based on Jay A. Huff, *A Treatise on the Practice of Mensurable Music in the Italian Manner*, Rome, 1972, p. 48, and William E. Dalglish, "The Origin of the Hocket", *Journal of the American Musicological Society*, 31/1 (1978), pp. 3-20, p. 12.

68 Toledo, Archivo de la Catedral, MS 23-17, ff. 22v-23r (pencil foliation on the top right corner),

Translation

The magistrer claustralis's task is to teach and instruct diligently the children or choirboys and other church beneficiaries in singing and in the customs of the church, and to correct and amend their defects or errors concerning their tasks in the choir [...] Moreover, the magistrer claustralis, if sufficiently learned in this matter, is also to play the organ, and for the work of playing the organ, shall be paid 100 maravedís[69] by the refectory and 365 by the fabrica [...] and for the teaching work, 10 dinars per day, as is stipulated in the constitution on daily payment.

But the pedagogical role of the Burgos magister/doctor in organo is even more strongly suggested by the fact that, barely two years after the statutes of the Burgos cathedral were confirmed by Pope Innocent IV, Alfonso X used exactly the same term to refer to the Chair of Music of the Salamanca University. In 1254 the king revised the statutes of that university by establishing the rules for its organization and financial endowment. In the document stipulating the salaries of each professor, Alfonso ordered the creation of a new position for a "maestro en organo":

> Otrosí, mando e tengo por bien que ayan un maestro en ógano, e yo que le [dé] çincuenta maravedís cada anno.[70]

De officio magistri claustralis. A later copy is also preserved in the Biblioteca Nacional de Madrid, MS 13021.

69 This salary is not to be compared with those of the Burgos doctor in organo of 1250/52 and the Salamanca maestro en organo of 1254, given that in 1265 King Alfonso X applied an aggressive devaluation of the Castilian coin. For more on the monetary system of medieval Castile, see Fernando Rodamilans Ramos, "La moneda y el sistema monetario en la Castilla medieval", *Ab Initio*, 1 (2010), pp. 22-83. See also Peter Linehan, *The Ladies of Zamora*, Manchester: Manchester University Press, 1997, p. ix (*A note on money values*).

70 The original document has been lost, but its content was inserted and confirmed in another document issued by Enrique III (king of Castile-León between 1390 and 1406). Document edited in Enrique Esperabé y Artega, *Historia pragmatica é interna de la Universidad de Salamanca*, 2 vols., Salamanca, 1914-17, I, pp. 21-23.

Translation

I command and deem it good that there be a master in organo, and that I give him fifty maravedís every year.[71]

In this regard, it is highly significant that Alfonso X's *General estoria* provides a definition of Music as a liberal art of the *quadrivium*, which includes explicit references to polyphony. We therefore know that the teaching of music at medieval Castilian universities was given an absolutely practical approach:

> E segund esto habemos la música, que es la segunda arte del cuadruvio. E ésta es ell art que ensenna todas las maneras del cantar, tan bien delos estrumentos como delas vozes e de qualquier manera que sean de son; e muestra las quantías delos puntos en que ell un son a mester all otro e tórnasse a la quantía d'él pora fazer canto cumplido por bozes acordadas, lo que ell un canto non podríe fazer por sí, assí como en diatésseron, e diapente, e diapason e en todas las otras maneras que a en el canto.[72]

71 The "maestro en organo", together with the "apotecario" (pharmacist), had the lowest salary on the list of professors. The Salamanca maestro in law received 500 *maravedís* annually, which he had to share with an assistant with a bachelor's degree; two "maestros en decretales" also received 500 *maravedís*, which probably had to be shared between the two of them; couples of maestros in grammar, logic and physics, received 200 *maravedís*. For more on the continuity of the music chair of the Salamanca University throughout the late Middle Ages, see Nan Cooke Charpentier, *Music in the Medieval and Renaissance Universities*, Norman: University of Oklahoma Press, 1958, pp. 92-95.

72 Pedro Sánchez-Prieto (ed.), *Alfonso X el Sabio. General estoria*, 10 vols., Madrid: Biblioteca Castro, 2009, I,I, pp. 380-381 (Part I, Book VII, Chap. XXXVI, *Delas conveniencias e delos departimientos de los saberes del cuadruvio entre sí*). The chapter provides an explanation of the four liberal arts of the *quadrivium* and their origin. In Chapter XXXVII (*De cómo fallaron los griegos la natura de la música*) we also read a definition of Music in its more practical sense: "And music is the art that teaches all forms of singing/playing and the pitch quantities, just as we said [above]; and this is the course of study required to learn to tune the voices and make the instruments sound" (E es música ell arte que ensenna todas las maneras de los sones e las cuantías de los

Approximate translation

And according to this, we have the music that is the second art of the quadrivium. And this is the art that teaches all the manners of singing, as well as of the instruments and the voices and of anything related to sound;[73] and shows the pitch quantities[74] that one tune requires to [match] the other in order to make a song consisting of coordinated voices,[75] which one tune cannot do by itself alone, thus in fifth and in fourth and in octave and in all other manners that there are in song.

This emphasis on the practical aspects of music in university teaching is better understood if we consider that the Salamanca University was an institution closely linked to the Salamanca Cathedral, and therefore served as a training centre for the cathedral clerics.[76]

puntos, así como dixiemos; e este arte [i.e. Music] es carrera pora aprender a cordar las uoces et fazer sonar los estrumentos). Ibid., I,I, pp. 381-382. For an overview of the Alfonsine *General estoria*, see Inés Fernández-Ordóñez, "El taller historiográfico alfonsí. La *Estoria de España* y la *General estoria* en el marco de las obras promovidas por Alfonso el Sabio", in *El Scriptorium alfonsí: de los Libros de Astrología a las Cantigas de Santa María*, edited by Jesús Montoya Martínez and Ana Domínguez Rodríguez, Madrid: Editorial Complutense, 1999, pp. 105-126.

73 "son" can be translated as 'sound', 'tune' or 'melody'. A more literal translation of this passage would be: "and of any manner that is of sound/tune".

74 Maricarmen Gómez Muntané (*Historia de la música en España e Hispanoamérica. I. De los orígenes hasta c. 1470*, Madrid, 2009, p. 210) interprets "quantías delos puntos" in mensural terms, i.e., as the length of time that a given sound lasts. In my opinion it would be more logical to interpret the expression as referring to the number of tones and semitones, since the text continues by stating "thus in fifth and in fourth and in octave and in all other manners that there are in song".

75 "canto cumplido por bozes acordadas" is nothing but a medieval Castilian expression for 'polyphonic singing'. The theorist Fernand Estevan (1410) writes similar expressions, such as "estos [signos] fueron ordenados e fechos para complimiento de las boses del canto de órgano", María Pilar Escudero (ed.), *Fernand Estevan: Reglas de canto plano è de contrapunto è de canto de organo*, Madrid: Editorial Alpuerto, 1984 (reprint ed., 2002), f. 7r.

76 See Charpentier, *Music*, pp. 92-95.

The same year Alfonso X revised the statutes of the Salamanca University (1254), he founded a new university in Seville,[77] which in 1260 received the protection of Pope Alexander IV.[78] Months earlier in 1254, the monarch had asked the Seville archbishop-elect to grant him the use of certain mosques in the city with a view to refurbishing them as dwellings for medical doctors coming from abroad and "to have them carry out their teaching therein".[79] He also transferred from Toledo the astronomy *studia*, which were directed by Guillén Arremón Daspa, canon of the cathedral, and by the Jewish scholar Rabiçag of Toledo.[80] By some twist of fate, no document reporting the chairs, the staff and the organization of the Seville University appears to have survived. Yet in view of the reform that Alfonso X applied to the Salamanca University, would it not be logical to assume that in 1254 a maestro en organo was provided for Seville as well?

If magister/doctor in organo was the term used in the thirteenth century to refer to the music teacher of a university or a cathedral school, we might suppose that the variant "magistro de organo" found in the documentation of the Zamora Cathedral meant exactly the same thing. The presence of a certain "magistro Johanne de organo" in the Zamora Cathedral in 1276[81] is certainly suggestive, given that it would be tempting to identify him with the Franciscan scholar and music theorist Johannes Aegidius, also known as Juan Gil de Zamora. Fray Juan Gil de Zamora obtained his magister in theology degree in Paris precisely in 1276, and in 1278 he is recorded as

77 "estudios e escuelas generales de latin e de aravigo". The foundational document is edited in Manuel González Jiménez (ed.), *Diplomatario andaluz de Alfonso X*, Sevilla, 1991, doc. 142, pp. 152-154.

78 Decree issued in the city of Anagni on 30 June 1260. H. Salvador Martínez, *Alfonso X, el Sabio. Una biografía*, Madrid: Ediciones Polifemo, 2003, p. 169.

79 "morada de los físicos que vinieron de allende [...] e que en ellas fagan la su enseñanza". González Giménez, *Diplomatario*, doc. 232, p. 255. We know that famous medical doctors, such as magister Pedro Catalán, established themselves in Seville and were granted houses and privileges by Alfonso. Martínez, *Alfonso X*, p. 169.

80 Martínez, *Alfonso X*, p. 169.

81 See Appendix.

a lecturer of the Franciscan monastery in Zamora ("doctor de los fraires descalços de Çamora").[82] Could he also have taught music at the cathedral school? Significantly, in the prologue of his *Ars musica*, Gil de Zamora refers to himself as a "lector" (of music?). The treatise, compiled between 1296 and 1304, deliberately refrains from dealing with mensural notation and polyphony, but rather provides preliminary, basic knowledge of the definitions of Music, the solmization system, the intervals, and various musical instruments.

Temptation notwithstanding, the name Johannes was extremely common and we should not be too quick to identify the Zamora "magistro Johanne de organo" in 1276 with Juan Gil de Zamora. The former could even have been the teacher of the latter, if we assume that Gil de Zamora studied music after having obtained his theology degree in Paris. In any case, the existence of a Chair of Music at the cathedral school of Zamora, possibly since the very early thirteenth century,[83] sheds light on the learning context in which music was cultivated in late medieval Zamora. We must bear in mind that the cathedral school was attended by clerics and monks from all over the diocese. A fragmentary folio containing thirteenth-century polyphony, Zamora 184,[84] was found some decades ago as a cover of notarial protocols from the ecclesiastical archive of Toro, a small but important town that had connections with the monarchy.[85] It is quite possible that the manuscript

82 See Ana-Isabel Magallón, "El *Prosodion* de Juan Gil de Zamora y la enseñanza de la gramática en su tiempo", *Studia Zamorensia*, 13 (2014), pp. 155-171: p. 158.

83 Another magister organista is recorded as a scribe in the documentation of the cathedral from the late twelfth and early thirteenth centuries. See Appendix.

84 Zamora, Archivo Histórico Provincial, perg. mus. 184. The manuscript, however, could have been compiled in the first half of the fourteenth century, as the Las Huelgas Codex was. See Catalunya, *Music, Space and Ritual*, Appendix 4.

85 The town of Toro, situated some 30 km from the city Zamora, was an important centre of political, religious and military power, as well as a focal point of commercial activity. King Alfonso X had a small palace there. In 1278 he ordered the clerical chapter of Toro to celebrate the anniversaries of his parents, Fernando III and Beatriz, and of his grandfather, Alfonso VIII, and to sing mass for the king's health every Saturday in the "Capiella delas nuestras casas de

belonged to the magnificent collegiate church of Santa María la Mayor in Toro. Two remarkable features of Zamora 184 are its extraordinarily large size and a mise-en-page of the chant-polyphony alternatim pieces, which, unlike the Las Huelgas Codex, includes both the chant and the polyphonic settings on the same page. These features match the type of lectern manuscript used by a choir of clerics and choirboys trained in the art of polyphonic performance.

To conclude, although there is irrefutable evidence that a magister/doctor in organo required to perform on the organ was present in Burgos in the first half of the thirteenth century, the earliest known reference to the organ itself in the Burgos Cathedral dates from 1308, and it was not until 1377 that the cathedral *Constitutiones* specified the feast days and solemn processions in which the organ was to be played (see below). The same general phenomenon (that the existence of the instrument is documented much later than the presence of organ players) is recognizable at the Toledo Cathedral and at many other Iberian and European cathedrals, and thus may challenge Craig Wright's view, according to which the organ was not used at the Cathedral of Notre Dame in Paris until the middle of the fourteenth century, when the presence of the instrument appears in the surviving documentation for the first time.[86]

Toro". Peter Linehan, "Two charters for Toro", *Historia. Instituciones. Documentos*, 23 (1996), pp. 333-338.

86 Wright, *Music and Ceremony*, pp. 143-144. For an account of the organs from the twelfth and thirteenth centuries that are documented in Paris (the Sainte Chapelle) and other churches and cathedrals in France, see Amédée Gastoué, *L'Orgue en France. De l'antiquité au début de la periode classique*, Paris: Édition de la Schola, 1921.

Appendix

Twelfth- and Thirteenth-Century organistae on the Iberian Peninsula

Tarragona Cathedral

"Lucas canonicus huius ecclesie, magnus organista" (†1164).[87]

Zamora Cathedral

"magister Dominicus organista scripsit" (ca.1197-1210).[88]

"magistro Johane de organo" (1276).[89]

Toledo Cathedral

"magister Galterius organista" (12th/13th c.).[90]

"Iocellinus organista" (12th/13th c.).[91]

"magister Dominicus Paschasii organista canonicus toletanus" (13th c.).[92]

"maestro Steuan el organista" (1234);

"magister Stephanus organista" (1250).[93]

87 Tarragona, Arxiu Històric Arxidiocesà, MS 2121/362 (obituary copied in the fifteenth century), f. 26r [47r], "vi. G. idus. Eodem die anno MCLXIIII obiit Lucas canonicus huius ecclesie, magnus organista". Cited and commented in Higini Anglès, *La música a Catalunya fins al segle XIII*, Barcelona, 1935 (reedited in 1988), pp. 66-67. Anglès asks himself whether "Lucas magnus organista" could have come from France, given that in 1154 a community of canons regular, Augustinian monks from the Abbey of St Ruf in Avignon, arrived in Tarragona in order to settle the cathedral chapter. With the arrival of these French clergymen, Tarragona had for the first time an archbishop with a permanent residence in the city. For more on the Iberian dissemination of the St Ruf order, see José Antonio Calvo Gómez, "Los cabildos hispánicos de canónigos regulares de la obediencia de San Rufo de Avignon (siglos XI-XV)", *Historia, Instituciones, Documentos*, 41 (2014), pp. 75-98.

88 Alberto Martín Márquez, *El paisaje sonoro en Zamora durante la Edad Moderna*, Ph.D. diss., Universidad de La Rioja, 2015.

89 Ibid.

90 Toledo, Biblioteca Capitular, MS 42-30 (obituary), f. 16r (February 2).

91 Ibid., f. 65v (May 23).

92 Ibid., f. 28r (February 26).

93 Toledo, Archivo Capitular, X.10.B.1.3 and E.11.F.1.1, respectively.

Burgos Cathedral

"P. Leonis, burgensis magister in organo [...] scripsit" (1222).[94]

"doctor in organo" (1250/52).[95]

Orense Cathedral

"magister Johannes organista" (1230).[96]

Santiago de Compostela Cathedral

"magister Laurencius organista" (1235).[97]

94 Document edited in José Manuel Garrido Garrido (ed.), *Documentación de la Catedral de Burgos (1184-1222)*, Fuentes medievales castellano-leonesas, Burgos, 1983, doc. 543, pp. 380-382.

95 *Constitutiones* of the Burgos Cathedral. Document edited in Demetrio Mansilla, *Iglesia castellano-leonesa y Curia romana en los tiempos del Rey San Fernando*, Madrid: Instituto Francisco Suárez, 1945, no 77, pp. 358-369: p. 362.

96 This organista is recorded as a witness of the sale of a house in the Galician city of Orense. Xosé Filgueira Valverde identifies him as the dedicatee of a satirical poem by Alfonso X. Xosé Filgueira Valverde, "Nuevos rastros documentales de juglares gallegos", *Cuadernos de estudios Gallegos*, 1 (1944), pp. 139-176: p. 138; Xosé Filgueira Valverde, *Estudios Sobre Lirica Medieval. Traballos dispersos (1925-1987)*, Vigo: Galaxia, 1992, p. 100; María Rosa Calvo-Manzano, *Alfonso X el Sabio, impulsor del arte, la cultura y el humanismo: el arpa en la Edad Medía española*, ARLU Ediciones, Asociación Arpista Ludovico, 1997, p. 206.

97 Document edited in José Ignacio Fernández de Viana y Vieites and María Teresa Gonzalez Balasch, "Documentos sobre derechos y posesiones de la iglesia compostelana en tierras portuguesas en los tumbos 'b' y 'c' y en el 'tumbillo de concordias' de la Catedral de Santiago", *Cemycyth*, 17 (1992), pp. 359-397: p. 370. According to Antonio López Ferreiro (*Historia de la Santa A. M. Iglesia de Santiago de Compostela*, 5 vols., Santiago: Seminario Conciliar Central, 1902), "del organista Mro. Lorenzo, que así hacía versos y trababa tençones, como manejaba varios instrumentos músicos, regístranse en el Cancionero de la Vaticana [Vatican Library, cod. Vat. Lat. 4803] numerosas composiciones. A principios del año 1245 recibió en foro de cabildo compostelano la heredad de Saa, cerca de Cornellà, en Portugal, de donde parece era oriundo" (V, p. 377); "En 24 de Enero de 1245 el Arzobispo y el Cabildo aforaron por tiempo de su vida al organista Maestro Lorenzo la tierra de Saa, cerca de Cornelia, en Portugal" (V, p. 175).

Salamanca University

"maestro en órgano" (1254).[98]

Segovia Cathedral

"magister Martinus organista" (1247).[99]

Lleida Cathedral

"P. Muñiz magistro organi (1279)".[100]

Chapel of King Sancho VI of Castile-León

"maestro Martín de los órganos" (1293).[101]

98 Document by King Alfonso X, university statutes. Edited in Enrique Esperabé y Artega, *Historia pragmática é interna de la Universidad de Salamanca*, 2 vols., Salamanca, 1914-17, I, pp. 21-23.

99 Archivo Capitular de Segovia, caj. 21 no. 1 (1 June). Document on the distribution of the chapter's income. Edited in Luis Miguel Villar García, *Documentación medieval de la Catedral de Segovia (1115-1300)*, Salamanca: Universidad de Salamanca, 1990, no 140, p. 214 (a magister scholarum is mentioned on p. 228); see also Peter Linehan, *Spanish Church and Society*, 1150-1300, London: Variorum Reprints, 1983, p. 107 and doc. 17.

100 Payment: "Item a P. Muñiz magistro organi dicte sedis 28 [soldios], vii [denarios]". José Rius Serra, "El obispado de Lérida en siglo XIII. La décima de la cruzada de 1279", *La Esperanza, revista del seminario de Lérida*, 3 (1926), p. 19. Cited in Anglès, *La música a Catalunya*, p. 85.

101 The organ bearers are also recorded as "acemileros de los órganos". Asunción López Dapena, *Cuentas y gastos (1292-1294) del rey D. Sancho IV el Bravo (1284-1295)*, Córdoba, 1984. Higini Anglès, *La música de las Cantigas de Santa Maria del rey Alfonso el Sabio*, 5 vols., Barcelona: Biblioteca de Catalunya, 1943-58-64, III, pp. 120-121.

Abstract

This article explores the functions that the thirteenth-century "organista" assumed as an organ player, a performer of vocal polyphony, and a music teacher at cathedral schools and universities. Although there is irrefutable evidence that a magister/doctor in organo required to perform on the organ was present in Burgos in the first half of the thirteenth century, the earliest known reference to the organ itself in the Burgos Cathedral dates from 1308, and it was not until 1377 that the cathedral Constitutiones specified the feast days and solemn processions in which the organ was to be played (see below). The same general phenomenon (that the existence of the instrument is documented much later than the presence of organ players) is recognizable at the Toledo Cathedral and at many other Iberian and European cathedrals, and thus may challenge Craig Wright's view, according to which the organ was not used at the Cathedral of Notre Dame in Paris until the middle of the fourteenth century, when the presence of the instrument appears in the surviving documentation for the first time.

David Catalunya

Conductor, keyboard player and researcher specializing in musical repertoires from the Middle Ages, David Catalunya cultivates a double profile as a performer and scholar. He holds a research position at the University of Würzburg (Germany), where he serves as an editor of the volumes devoted to 12th-century tropes and Latin songs in the monumental series Corpus Monodicum. He is a member of the Organ Academy of Cuenca, and an Associated Director of DIAMM (Digital Image Archive of Medieval Music, Oxford Faculty of Music). His discography includes most notably the CDs "Faventina" (the sacred repertoire of the Codex Faenza, with Mala Punica), "Meyster ob allen Meystern" (15th-century keyboard music, with Tasto Solo) and "Le chant de l'eschiquier" (Dufay and Binchois songs in the Buxheim manuscript, with Tasto Solo), which together have been awarded more than 30 international prizes and distinctions, including Choc du Monde de la Musique, Amadeus, three times Diapason d'or and one Diapason d'or de l'année.

VII

Dominique Gatté - After Buxheim: Fragments of a Lost Organ Book in Alsace

The departmental archives in France preserve an important body of Medieval fragments, that are little known, but in some cases are true hidden treasures. Unfortunately, there are as yet very few available inventories, and even these are not exhaustive. But several projects are now under way to bring those neglected sources to public attention.
The archives of the Upper Rhine (or Haut-Rhin) department at Colmar, have created a special collection for Medieval fragments. At present, this collection contains more than 700 items. Most of these fragments have been removed from the bindings of registers, especially those compiled at monastic and secular houses in the region of the Upper Rhine. Among these, I have been able to identify ninety-eight fragments with musical notation. These musical fragments range from the 10th to 17th centuries. Two of the most interesting items date from the late 16th century. These are the remains of an organ book, and a fragmentary Credo in mensural notation. Yet there are also fragments of another organ book, which is much older, dating from around the year 1500.

The Colmar fragment

This source consists of altogether 15 leaves, of varying sizes. I will refer to the source as the "Colmar fragment". The leaves have been removed from three financial registers, made up at the Dominican monastery of Unterlinden, in Colmar. The paper is very thick, and of varying quality. No watermark is visible. Unfortunately, there is also no trace of page numbering, or gathering numbering. This makes it difficult to reconstruct the original order of the leaves. Still, with the help of textual, musical, and paleographical clues, I have been able to identify at least one quaternio.

The first of these clues are the various inscriptions that point to alternatim performance of a *Salve regina*. Although these inscriptions are on different leaves, comparison with the original plainchant confirms that they refer to one and the same piece. After this *Salve regina* there is a change of scribal hand. The script of the second scribe seems to be the latest in the fragment. We find the same hand at the beginning of the fourth bifolio, where it continues the piece that came after the *Salve regina*. These various clues allow us to reconstruct one quaternio. There are three other gathering fragments, of which two must have once bordered the quaternio. Margins appear to be drawn either with a ruler or freehand, and without any attempt at consistency or uniformity. Various other irregularities also confirm that no rastrum was used.

We find three languages in the fragment, Latin, German, and Italian. German and Italian texts are found only in the titles of pieces.

It is evident, even at first sight, that four scribes were involved in the making of this organ book. Later scribes evidently used space left blank by their predecessors. Just as in other sources from this period, the various scribes marked the endings of pieces with the words finis, or huius finis. They also provided the titles of the pieces, either at the beginning or at the end, in empty spaces, and most frequently in the margins. Apart from the modest ornamention of some initial letters, there is no decoration to speak of.

As for the date of the organ book, there is one very important clue, provided by the second scribe at the end of his piece. He writes there: "Finis huius nie noch nimer. In die nativitatis virginis gloriose, anno Domini, millesimo quingentesimo septimo, laus deo." In English: "Here ends Nie noch nimer. On the day of the Nativity of the Virgin [8 September] fifteen-o-seven. Praise be to God."

The scribe who wrote this inscription was undoubtedly one of the latest to work on the organ book. This indicates that the principal corpus must have been compiled before 1507. The various hands of the Colmar fragment strongly recall the second part of the Buxheimer Orgelbuch, in which ten different hands have been identified.

It would seem that the organ book was made for private use, and passed on from one musician to another. All those musicians were probably in charge of one and the same instrument. Certainly we are not dealing with a

formal source written on official commission. This is clear from the extreme irregularity of the margins and musical staves. And it is suggested also by the inscription of the second scribe, which seems to have served as a reminder of the date, meant for his successors.

Notation

Let us now turn to the musical notation. The Colmar fragment belongs to the group of German tablatures with mixed notation, that is, on staves and in letters. Some notational signs are used for all parts, for example, repetitions, or the indication of changes in mensuration.

Most of the pieces are in three parts. But three settings are in four. Mostly we are dealing with compositions based on plainchant melodies. One is an alternatim setting. Another is a praeambulum. And there are several pieces from the German repertory. Here is a list of compositions and versicles.

FOLIO	TITLE/REFERENCE
A-1v	Finis huius La Morra
A-2r	Finis
	Preambulum in fa
A-2v	Salve Regina
B-1r	Ad t[e cla]ma[mus] (a)
B-1v	[Eia] ergo (a)
B-2r	Nob[is post] (a)
B-2v	[o] pia (a)
	Salve
B-3r	Finis huius Nie noch nimer
B-6v	Ich bin ir lang zeyt holde gewesen
	(?) deo
B-8v	Inscription illisible (?)
C-1v	O B d h v w v b
X-1r	Finis
X-2r	Finis huius Laus Deo, pax vivis, requies defunctis

There are three secular settings, which are found also in German and Italian lute tablatures. The most interesting concordance is La Morra by Heinrich

Isaac. This is, of course, a genuine classic from the period. La Morra is otherwise found in seventeen manuscripts and prints. There are also two keyboard sources for the piece, the Sicher manuscript, and the Kotter tablature.
It seems, then, that the original organ book was not intended exclusively for liturgical use. Rather, it appears to be a collection, containing a large number of secular and sacred settings. We can also say with some confidence that the repertoire dates from around the turn of the century. Some pieces clearly date from the early 16th century. But we also find compositional techniques from the 15th century, for example in the fundamenta in the *Salve regina*.

Closing the gap

As Vincent Arlettaz noted,[1] there is a significant gap of several decades between the Buxheimer Orgelbuch (c1470), and the tablatures of Kotter and Sicher (c1510). The Colmar fragment bridges this gap, and shows, as it were, a transitional stage between the 15th and 16th centuries.
Let us briefly consider the Buxheimer Orgelbuch. It has often been suggested that Conrad Paumann must have had something to do with its compilation. Paumann, of course, is the famous master of the German keyboard school, and the author of the *Fundamentum organisandi*. Yet there is no conclusive proof of his involvement, nor of the Bavarian origin of this manuscript. In fact, two recent studies, both published in 2003, seem to argue against it. One is by Judith Kaufmann, and is devoted to the paper of Buxheim, and the other is the comprehensive study by Lorenz Welker.[2]
Jacques Meegens has demonstrated, with the help of Kaufmann's study, that the geographical distribution of the Buxheim papers points away from Bavaria, and is closer to Switzerland and the Alsace. On the other hand,

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1 Vincent Arlettaz. *Musica Ficta | Une histoire des sensibles du XIII au XVI siècle*. Spirimont: Mardaga, 2000.

2 Judith Kaufmann. "Das Papier des Buxheimer Orgelbuchs. Überlegungen zu Anlage, Lokalisierung und Datierung der Handschrift". *Neues musikwissenschaftliches Jahrbuch* 11 (2002/2003). 49-66.

Lorenz Welker/ "Das Buxheimer Orgelbuch: Provenienz und überlieferungsgeschichtliche Einordnung". *Neues Musikwissenschaftliches Jahrbuch* 11 (2002/2003). 67-87.

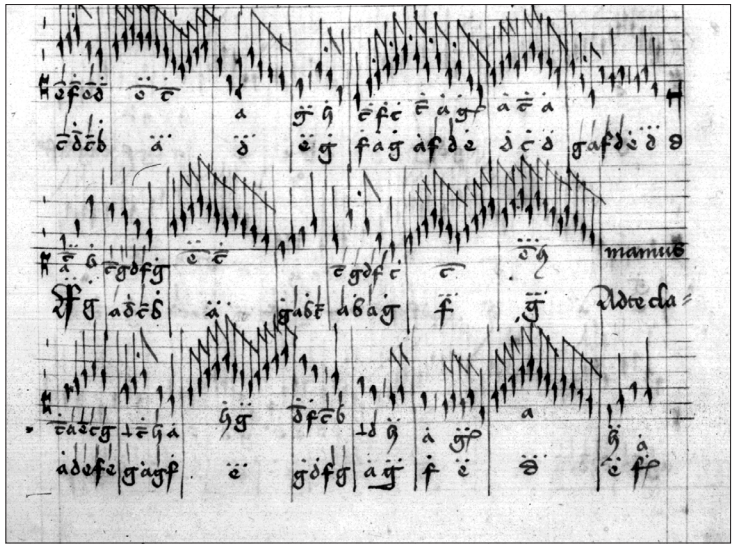
Lorenz Welker has noted that the some of the inscriptions in the Buxheimer Orgelbuch show characteristics of Bavarian dialect. He suggests that we are perhaps dealing with a German scribe who worked in Switzerland, or a Swiss scribe who had moved to Germany. But Meegens has argued against this, noting that the Buxheim titles do not show enough linguistic consistency to support that scenario.
Much is also still unclear about the original use of the Buxheimer Orgelbuch. As I have noted earlier, there are at least ten different hands,. Jacques Meegens suggests that the organ book was originally compiled by a professional organist, and that the later hands are those of his successors. Alternatively, the book may have circulated between organists. All this leaves the distinct possibility that the Buxheimer Orgelbuch might have been compiled nearer the Alsace. The Colmar fragment is the only source found in that region. There are very few other sources that can be compared to Buxheim.
Let us now turn to the much later Sicher tablature. Its origin is well established. The collection was originally owned by Fridolin Sicher, and can be dated between fifteen twelve and fifteen thirty one. Sicher served as the organist of Saint Gall from fifteen fifteen onwards. He collected 176 pieces in his manuscript, of which more than 2/3 are sacred. Most of these pieces are in four parts. The writing of the Sicher tablature closely resembles that of Buxheim. Yet the staves consist of five lines, not seven as in Buxheim. The technique of the fundamenta is found in most of the Buxheim pieces, but is virtually absent in Sicher. The repertories of the two sources also show little overlap.

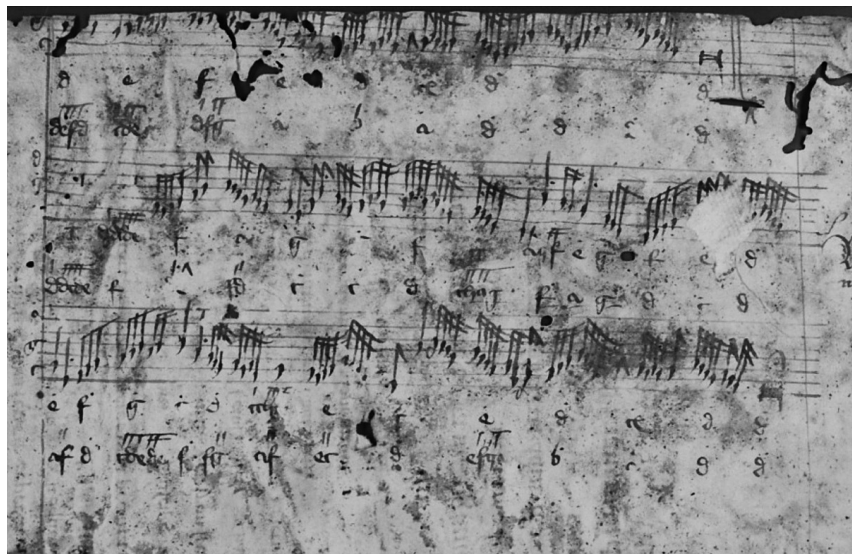
Connections with other sources

Returning now to the Colmar fragment, we can observe many features that it has in common with Buxheim and Sicher. One such feature has to do with the notation of the fusae and semifusae. In tablatures from the early 16th century, these notes are typically written in abbreviated fashion. And in many sources from this time, only the first note of the group carries a specific rhythmic connotation. This feature is rarely found in Buxheim, but it is consistently applied in both Sicher and the Colmar fragment.

Comparing the Buxheimer Orgelbuch and the Colmar Fragment

The first photo shows a fragment of the Buxheimer Orgelbuch (München, Bayerische Staatsbibliothek, Mus. Ms. 3725, 80r); the second one a fragment of the Colmar Fragment (Colmar, Archives départementales du Haut-Rhin, Fragments de manuscrit médiévaux 544, B-1r).





The Colmar fragment also contains another significant notational feature, thus far unique to the Buxheimer Orgelbuch. This is the particular way of writing the repetition signs. There is a close resemblance in appearance between Buxheim and Colmar.

The keyboard range in the Colmar fragment spans three octaves, from F to f2. So the fragment has three more low notes than Buxheim. It is not surprising, therefore, that the repertory also seems more advanced, as one would in any case surmise from the later date. Still, it is worth emphasizing an important shared element between the two sources, namely, the use of fundamenta. The most noteworthy example is the setting of the *Salve regina* chant. The entire *Salve regina* is constructed according to the principle of the fundamenta, except for one passage which involves octave repetitions. Yet the technique is rarely found in sources from the early 16th century.

The composer of the *Salve regina* appears to have followed teachings connected with the school of Conrad Paumann. Yet he also distances himself from those teachings. Moreover, we have seen that the Colmar repertory approximates that of Sicher, which contains pieces by Hofhaimer and Isaac. The Colmar and Sicher manuscripts also show close resemblances in writing and script. Of the four Colmar scribes, the closest to Sicher is number four, who uses the alpha just like Sicher. In Colmar, the alpha replaces the la for the contratenor. In the Sicher tablature, the same sign is always present in the lowest part, which is consistently placed at the bottom. In Colmar the lowest part is sometimes placed at the bottom, as in Sicher. But sometimes it is the tenor which is placed at the bottom, as in Buxheim. Once again, it seems, the Colmar fragment is half-way between Buxheim and Sicher.

Scribe number 4 of the Colmar fragment is also quite close to Sicher with regard to the notation of ornaments and alterations. He indicates these with combinations of curls and stems that are beamed together.

Conclusion

Let us sum up. The Colmar fragment preserves a very rich and varied repertory, showing characterists of both the late 15th, and the early 16th centuries. The similarities with the Buxheimer Orgelbuch and with the Sicher tablature suggest a date between these latter sources. The Colmar

fragment was evidently used by a succession of musicians, or shared among musicians active around the same time.

At the present stage of my research I cannot pinpoint the exact location where the organ book was compiled. All we know is that it was, at some point, in the possession of the Dominicans of Unterlinden. Nothing stops us from contemplating the possibility that the manuscript belonged to one of the organists of the monastery. In fact, the other organ fragment in Colmar, which I mentioned at the beginning of this presentation, shows interesting similarities with the fragment from Unterlinden, even though it is obviously much later. Among the pieces contained in this latter source, I have been able to identify a tablature of the song *La bataille* by Clément Janequin. Importantly, this later organ book also comes from a Dominican house in the Alsace, that of Vieux-Thann, not far from Mulhouse. Was it the custom among Dominicans to compile comprehensive collections of organ music, shared by different organists? Or does the presence of secular pieces indicate that the original scribes were professionals, and that they moved about with their copies?

I hope to address these and other questions in my ongoing research on the Colmar fragment. Among the most urgent tasks is the transcription and analysis of the musical repertory. This would allow us to get a better picture of organ playing in this period. And I hope that further analysis of the scribal hands may allow us to study the genesis of this source in greater detail.

Abstract

In the archives of the Upper Rhine (or Haut-Rhin) department at Colmar, I discovered ninety-eight fragments with musical notation, from the 10th to 17th centuries. Two of the most interesting items date from the late 16th century. These are the remains of an organ book, and a fragmentary Credo in mensural notation. Yet there are also fragments of another organ book, which is much older, dating from around the year 1500, which I will refer to as the "Colmar fragment". The principal corpus of this fragment must have been compiled before 1507.

The Colmar fragment bridges the gap between the Buxheim organ book (c1470), and the tablatures of Kotter and Sicher (c1510). The Colmar fragment was evidently used by a succession of musicians, or shared among musicians active around the same time. At the present stage of my research I cannot pinpoint the exact location where the organ book was compiled. All we know is that it was, at some point, in the possession of the Dominicans of Unterlinden.

Translation

Translation from the original French: Rob C. Wegman, Associate Professor of Music, Princeton University.

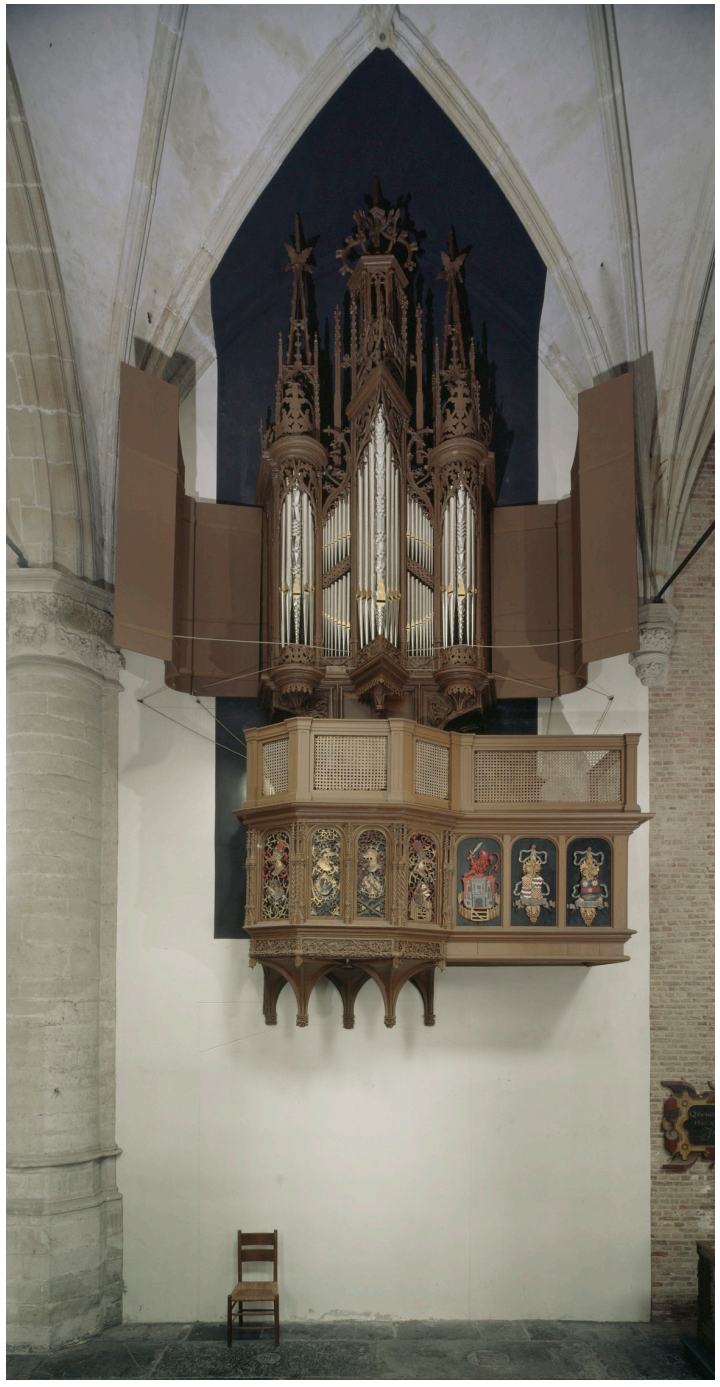
Dominique Gatté

Dominique Gatté grew up in a musical family. He started studying traditional instruments, such as the bombarde and the biniou-coz, as well as music theory, at a very young age. After that, and still only 15 years old, he discovered medieval and renaissance music and started playing the cromorne, meanwhile exploring his father's library on gregorian chant. After having obtained his 'licence de théologie' at Strasbourg University in 2012, Gatté started studying Musicology at the University de Poitiers. As a researcher, Dominique Gatté is primarily interested in manuscripts; one of his initiatives is the website http://www.gregofacsimil.net.

VIII

Wim Diepenhorst - The Gerritsz Organ of the Nicolaïkerk in Utrecht

When in 1511 Jan van Covelens finished his now famous choirorgan for the Grote Kerk in Alkmaar he instantly changed the way organs were built in the Netherlands. He introduced sounds that were completely new to the Dutch organists and organbuilders, like flutes and reedstops. This organ still exists and is the oldest playable organ in the Netherlands.
The inventions Van Covelens introduced not only changed the way organs were constructed. They also made the organs that were recently constructed in the regular 15th-century style look old-fashioned. In a short period of time the organs from before 1500 were replaced or at least renovated. Because of this and later developments almost none of the medieval organs survived. This is even more regrettable since these 15th-century organs functioned in a time that the dutch-flemish vocal music was at its height. The actual sound of these organs can only be imagined. Fortunately one of these organs survived the ages: the old organ of the Nicolaïkerk in Utrecht, built in 1479 by the Utrecht organbuilder Peter Gerritsz.
Although this organ was changed in the 16th century an important part of the original construction remained untouched. The organcase is now situated in the Koorkerk in Middelburg; the instrument itself is under the care of the Cultural heritage agency of the Netherlands. The agency is preparing a restauration of this important instrument. It will be reunited with the church it was originally built for in 1479. In preparation of this restauration a copy was made of the surviving parts of 1479 which were used in a reconstruction of the original 15th-century instrument. This organ was commissioned by the Orgelpark in Amsterdam and placed there in 2012.



Van Covelens Organ Grote Kerk Alkmaar

Photos on these pages: Rijksdienst Cultureel Erfgoed

History of the Nicolaï-organ

Peter Gerritsz came from the city of Hoorn and was the founder of an important Utrecht school of organbuilding. It lasted well into the 16th century. His largest project was the organ in the St.-Bavokerk in Haarlem that became wellknow through the paintings of Pieter Saenredam. It was replaced by the famous organ built by Christian Müller in 1738.

The son and grandson of Peter Gerritsz, Gerrit Petersz and Cornelis Gerritsz also contributed to the history of the Nicolaï-organ. Both Peter and Gerrit worked in a traditional late-medieaval style. When one of the organs by Gerrit was just finished the fame of Van Covelens had reached Utrecht.

Gerrit Petersz was asked to improve his own instrument in the modern style but he was not able to change his methods of working. However, he was clever enough to send his son Cornelis Gerritsz to study the new style with Van Covelens. The additions that Cornelis Gerritsz made to the old Nicolaï-organ, a new Rugpositief and a new Bovenwerk, are completely in the style of Van Covelens and completely different from the style of his father and grandfather.

In 1547, Cornelis Gerritsz made a new Bovenwerk and added a Rugpositief (chair-organ). The Rugpositief consisted of a principal plenum divided in 4 separate stops with flutes and reeds. The Bovenwerk consists of a Principal 4' and flutes and reeds, in the renaissance style of Van Covelens. We have reasons to believe that the windchests and pipes of the Bovenwerk were made by or in the workshop of Van Covelens.

The original Hoofdwerk of 1479 survived; the middle-tower that originally consisted of 5 pipes, placed directly on the windchest, was enlarged to 7 pipes in a pointed tower. The original facade was completely flat. The Principaal from the Hoofdwerk was not changed although the compass was altered to the somewhat unusual FGA-c3, using all 42 tonechannels of the windchest.

The Rugpositief and Bovenwerk had the normal compass FGA-g2a2 (38 keys).

It is very interesting that three types of windchests have survived in the Nicolaï-organ: the blokwerkchest from 1479, as well as the sliderchest (Rugpositief) and springchest (Bovenwerk) of 1547. The springchest of the Bovenwerk is the oldest and actually only surviving 16th century springchest in the Netherlands. It is sometimes overlooked that the chest of 1547 are just as unique and important as the old windchest of 1479.

Original parts of the Gerritsz Organ

Waiting to be put on their original positions in an especially made frame (2008) for research purposes

Rijksdienst voor het Cultureel Erfgoed, location Lelystad

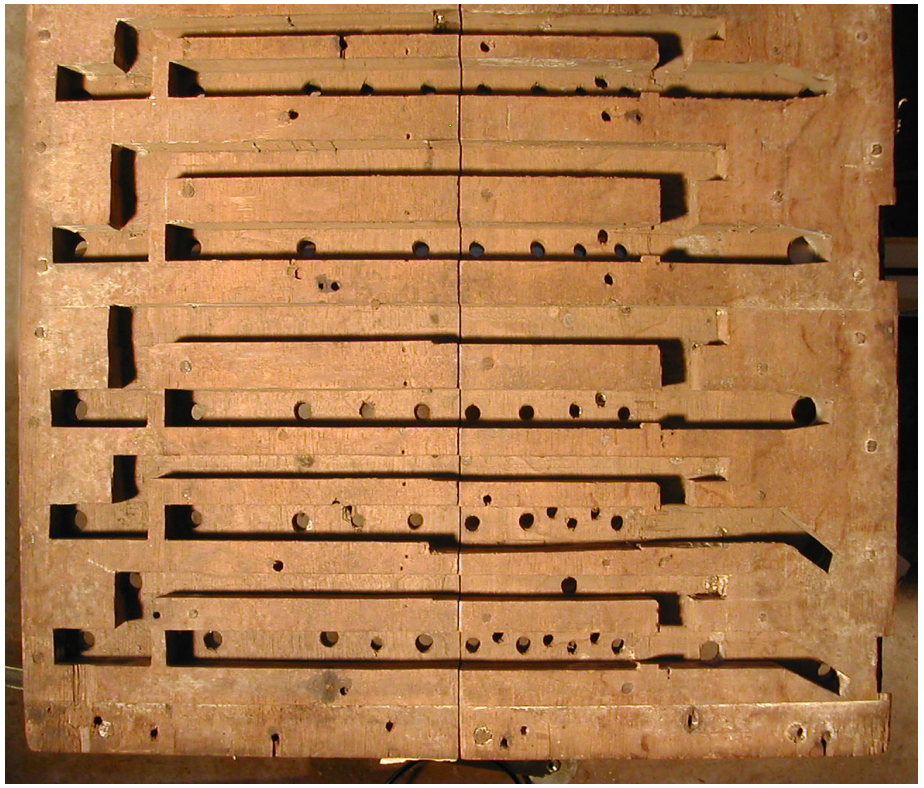
In 1601, Dirk Jansz de Swart and Jacob Jansz van Lin added a pedal windchest with a Trompet 8' to the organ. They also restored and renovated the instrument. They replaced the largest frontpipes and changed the scaling of the pipes by moving them to other positions. Although most of the smaller pipes of the Principaal dissapeared later we can safely assume that De Swart and Van Lin were responsible for the addition of smaller pipes to the existing Principaal of the Hoofdwerk. It was not unusual that the low composition of the gothic Principaal was altered to a more renaissance Plenum by removing lower ranks and adding higher. Most of the smaller pipes on the Hoofdwerk that survived the 18th-century are made by De Swart and Van Lin.
In the 17th and 18th century the reedstops were removed, except for the Trompet of the Pedal. In 1686 the organbuilder Van Montfoort replaced one of the reedstops of the Rugpositief by a Sexquialter for which he used pipes of the 1547 Scherp. Between 1700 and 1730 the large Principaal of the Hoofdwerk lost most of its smaller ranks due to leadcorrosion and playful rats.
In 1733, when Christian Müller was asked to repair the organ, he found that the Principaal was reduced to 3 1/2 ranks (16', 8', 4', 4' (treble). Originally there had been 7-18 ranks and even more after 1601. Müller renovated the instrument and reduced the number of manuals from three to two. He connected the action of the Bovenwerk to the keyboard of the Hoofdwerk. Except for new keyboards Müller did not change the instrument at all. The windchest and the existing action were restored and only a few pipes by Müller survived.
The organ survived many plans for replacement or renovation during the early 19th-century due to the simple fact that the Nicolaïkerk was poor. Only in 1885 the organ was replaced by a new one constructed by J.F. Witte. By that time the historical value of the old organ was fully recognized; eventually, it was placed in the then recently built Rijksmuseum in Amsterdam. It remained there until after Worldwar II. Before it was taken down from the place where it had sounded for more than 400 years a technical drawing was made by the organbuilder Maarschalkerweerd.
In 1952 the organcase was moved to de Koorkerk in Middelburg, a church that had been rebuilt after severe damage in Worldwar II. The plans to

restore the instrument and move it to Middelburg as well were stopped just in time. The brutal manner in which the organcase was restored indicates that the instrument would in fact have been destroyed. The instrument was stored safely by the Rijksdienst voor de Monumentenzorg, the predecessor of the aforementioned Cultural heritage agency. The plan to restore the instrument and to reunite it with its organcase in the church it was originally built for could not be carried out yet, due to legal procedures.
What *did* take place was the building of a reconstruction/copy of the 1479 situation in the Orgelpark in Amsterdam. This organ was built by Orgelmakerij Reil in Heerde, based on my research.

Surviving parts of the Nicolaï-organ

The organcase, as well as the windchest, some pipes and the action of the Hoofdwerk in its present state all date from 1479. Of the original 1479 Bovenwerk only the rollerboard was reused in 1547. The lines with which the position of the pallets, the rollers and the trackers were marked on the board were of great help in the reconstruction of the original Bovenwerk in the new organ for the Orgelpark.
Only about 60 pipes of the Principaal survived and less than 10 of the original frontpipes. The frontpipes were made of almost pure tin and the other ranks of almost pure lead. Originally the compass of the Principaal was probably HCD-f2 (42 notes) and the number of ranks varied from 7 in the bass to 18 ranks for the highest notes. Because only part of the piperacks survived it is difficult to reconstruct the exact composition of the Principaal. Based on the information available during the building of the organ for the Orgelpark we chose a composition of 8'-6'-4'-3'-2'-1 1/3', the 6 ft entering at f0. We now have reasons to doubt this composition, especially the presence of the 6'.[1]
The windchest was constructed with two solid pieces of oak. The tonechannels were chiseled out and all the pipes were placed on the windchest, including the frontpipes. The 4' rank is the last row on the windchest. The smaller ranks are placed in between the frontpipes and the 4' rank. On both sides of the windchest, in the sidetowers, there are double tonechannels and pallets for

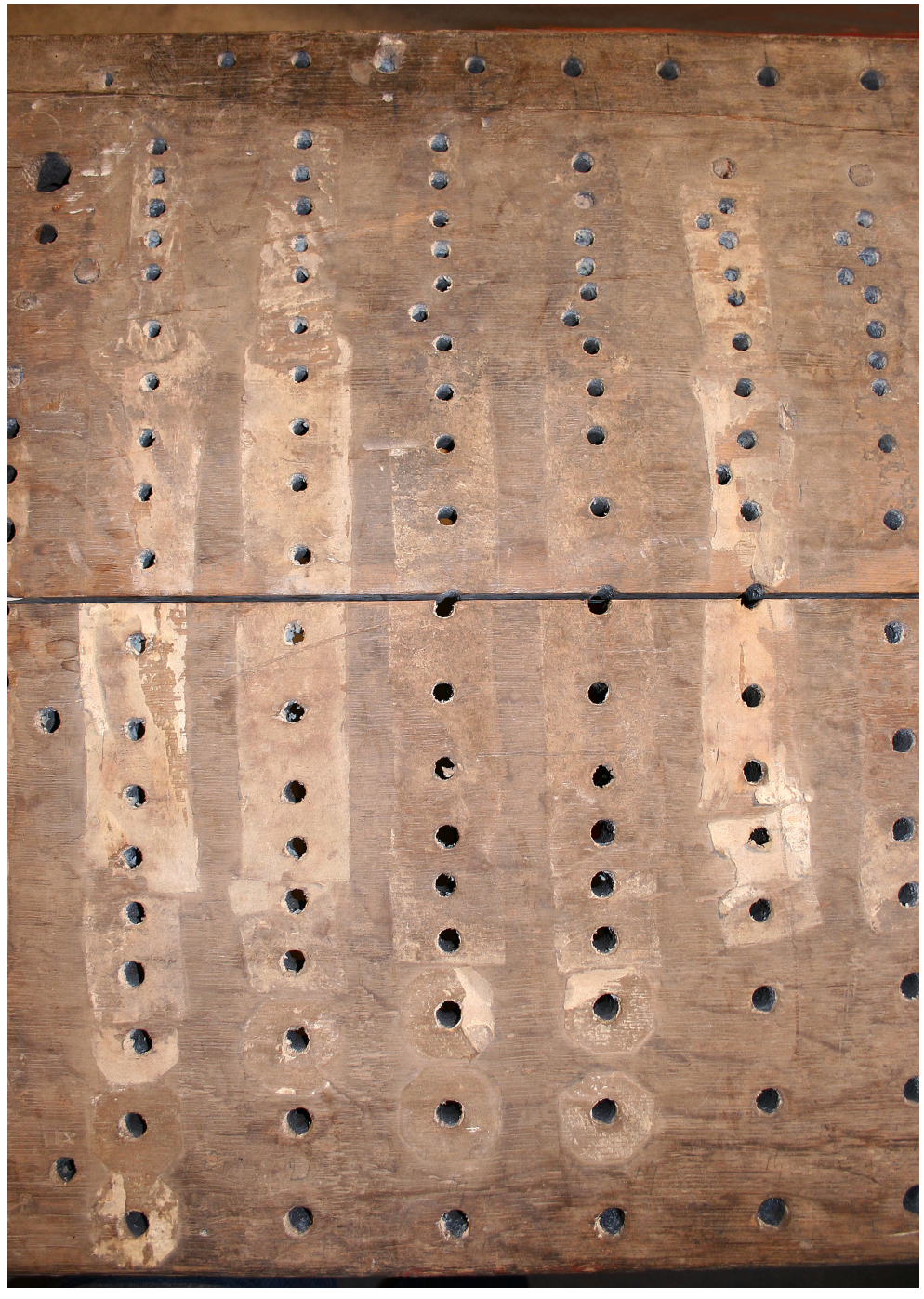
1 An elaborate publication on the organ at the Orgelpark by the autor is in preparation.



The original Blokwerk windchest

Double tonechannels: transmission system

12 notes. This “transmission” was used either for a pedal from F-e or, as we decided for the reconstruction, as the first 12 notes of the Principal 8′ of the original Bovenwerk. On the second of each double channel only the 8′ pipe and the 4′ sound together. The first lets the full Principaal sound.
The two windchests of the Bovenwerk date from 1547. These are springchests with both 38 notes, one placed directly above the other. The upperchest is “fed” by means of conducts from the tonechannels of the lower windchest. On the lowerchest there were five stops: Prestant 4′ (mostly frontpipes), Gemshoorn 2′, Sifflet 1′, Nasard 3′, reedstop. On the upperchest the following stops were placed: Holpijp 8′, Fluit 4′, reedstop. The reedstops were removed in the 17th and early 18th century. The Holpijp 8′ and the Nasard are chimneyflutes. The other flutes are open and cilindrical. The Fluit 4′ has a narrow pipemouth: 1/5 of the circumference. The frontpipes of the



The original Blokwerk windchest

Topside, Principaal 7-18 ranks

Principal were placed as so-called mirrored flats. The two pipes of the same note are connected through the foot and the lower pipe receives the wind for both pipes from the windchest with conducts.
The Rugpositief of 1547 also has two windchests, again positioned as upper- and lowerchest, like the Bovenwerk. These windchests are sliderchests. The pallets are positioned vertically. The original disposition of the lowerchest was: Prestant 8′, Fluit 2′, Scherp, Mixtuur and a reedstop. The upper chest had 3 stops: Quintadeen 8′, Octaaf 4′ and a reedstop. The reedstop of the upperchest was replaced by a Sexquialter in 1686 and the Scherp and Fluit 2′ were removed. Some pipes of the Scherp survived in the Sexquialter and some Fluit 2′ pipes were used in the Gemshoorn 2′ of the Bovenwerk. The reedstop of the lower windchest was removed in the 17th or 18th century and later replaced by a Flute 4′, probably dating from the 18th century.
The two keyboards of Rugpositief and Hoofdwerk/Bovenwerk were constructed by Christian Müller in 1733 and are the oldest known keyboards of this famous organbuilder.

The present specification of the Nicolaï-organ

Hoofdwerk (FGA-c3)
Principaal 16 voet 3-4 sterk
(16′-8′-4′-4′)

Rugpositief (FGA-g2a2)
Prestant 8 voet
Quintadeen 8 voet
Octaaf 4 voet
Fluit 4 voet
Mixtuur
Sexquialter

Pedaal (CDEFGA-c1)
Trompet 8 voet

Bovenwerk (FGA-g2a2)
Holpijp 8 voet
Prestant 4 voet
Fluit 4 voet
Nasard 3 voet
Gemshoorn 2 voet
Sifflet 1 voet

Pitch: a1 ~ 470 Hz

Abstract

In the early 16th century Jan Covelens changed the way organs were built in the Netherlands, by introducing new sounds. As a result older organs were replaced or changed. Only one instrument survived until today: the organ Peter Gerritsz built in the Nicolaïkerk in Utrecht. It was inaugurated in 1479. It has been changed in the 16 th century main parts of the original construction remained untouched. Today, the case is located temporarily in Middelburg. The Cultural heritage agency of the Netherlands prepares rejoining the case and the organ in the Nicolaïkerk in Utrecht.
Main moments in the history of the are 1547, 1601, and 1733. In 1547, Cornelis Gerritsz, grandson of Peter, made a new Bovenwerk and added a Rugpositief (chair-organ); the Bovenwerk was equipped with two 38-note springchests; the Rugpositief with two sliderchests. The chests and pipes might have been made in the workshop of Van Covelens. Both wind-chests survived, together with the Blokwerk wind-chest from 1479. In 1601, Dirk Jansz de Swart and Jacob Jansz van Lin added a pedal windchest with a Trompet 8′. They changed the composition of the Principaal (the Blokwerk) by removing lower ranks and adding higher ones. In the early 18th century the Principaal lost most of its smaller ranks due to leadcorrosion and pests. In 1733, the famous Christian Müller renovated the instrument and reduced the number of manuals from three to two, connecting the action of the Bovenwerk to the keyboard of the Hoofdwerk. In 1885, the organ was replaced by a new one; it was relocated at the Rijksmuseum in Amsterdam.The windchest, some pipes and the action of the Hoofdwerk in its present state all date from 1479. Only about 60 pipes of the Principaal survived and less than 10 of the original frontpipes. Of the original 1479 Bovenwerk only the rollerboard was reused in 1547. From 1547 all four windchests survived. The keyboards date from 1733.

Wim Diepenhorst

Wim Diepenhorst studied musicology at Utrecht University and organ at the Sweelinck Conservatory Amsterdam, with Hans van Nieuwkoop. Wim

Diepenhorst was professor of organ at the Amsterdam Conservatory and organist of the Oude and Rond Lutherse Kerk at Amsterdam. In 2003, he was appointed Organ consultant of the Cultural heritage agency of the Netherlands. As such, he was partner of the editorial board of the 15-part encyclopedia of Dutch historical organs. Next to his work as an organ consultant, Wim Diepenhorst is an acclaimed international concert organist.

IX

Rogér van Dijk - The Peter Gerritsz Organ of the Nicolaïkerk in Utrecht

The Peter Gerritsz organ of de Nicolaïkerk in Utrecht is in many ways a very special instrument. It is not only the oldest preserved organ in the Netherlands, but it has a unique set of windchests as well: a 'blok' chest, a spring chest and a slider chest. The organ thus reflects the history of organ building in Utrecht from the late 15th until the early 17th century. Furthermore, no other historical Dutch organ travelled so many miles in the past 150 years. And, last but not least, the organ is worldwide one of the most studied instruments and definitely the most discussed one.
Since the last decades of the 19th century organ builders, organ experts, organ lovers, historians, museum directors and many others have meddled more ore less with the history and/or the future of this instrument. They referred in most cases to the information that could be obtained from the instrument itself. Available archives were taken less into account. Many theories regarding the original construction and subsequent changes of the organ were developed this way.
My part in preparing the building of the research copy of the Peter Gerritsz organ in the Orgelpark was to assess all archival material concerning the instrument. This text pictures the history of the organ until 1750 in a nutshell. A warning upfront: although many records from this period have been preserved, this account is all but complete. Not only are there gaps in the records themselves, but it is also impossible to determine to what extend the works that were carried out have been documented in an precise and/or complete manner. The records were mostly kept by the churchwardens, who had mostly little or no professional knowledge with regard to organ building matters.

The organ itself is an incomplete source as well: some of the later alterations possibly erased all traces of previous situations. One should be very careful: interpreting the preserved parts and all the traces they carry is a complex task.

Building of the organ

The St.-Nicolaaskerk, as the church was called in those days, underwent a radical metamorphosis in the 15th century. The building, which dates back to the 12th century, received more or less the shape and dimensions that it still has today. From 1460 on, the works were carried out under supervision of Jacob van der Borch. Van der Borch was the architect of the Domkerk; at that time the transept of the Domkerk was being build.
In 1477, the St.-Nicolaaskerk was ready to be refurnished. We know that there were at least two organs present in the early 15th century: one was owned by the Onze Lieve Vrouwebroederschap, the other by the churchwardens. Although the latter had been relocated during the renovation of the church, it did not remain undamaged. In 1477 Jacob van der Borch paid the churchwardens a considerable amount of money to compensate for the damage to their organ. In that same year the churchwardens commissioned Peter Gerritsz to build a new main organ. Peter Gerritsz, who lived in Utrecht as early as 1458, is considered to be the most important organ builder in the northern part of The Netherlands during the second half of the 15th century. He worked for instance in the Oude Kerk in Delft and built in 1463-1466 a new large organ for the St.-Bavokerk in Haarlem. Most of his activities took place in the many Utrecht churches, however. He not only renewed the existing organs in the St.-Salvatorkerk, St.-Jacobskerk and the Domkerk, but also built (almost completely) new organs in the Buurkerk and the Pieterskerk.
Having such a track record, it is not surprising that the churchwardens of the St.-Nicolaaskerk also turned to him to build a new organ. Later on, the Onze Lieve Broederschap and the Kruisbroederschap in the St.-Nicolaaskerk also ordered instruments from Peter Gerritsz. As far as we know these three organs for St.-Nicolaaskerk were the last ones in his important career. He died in 1481 and was succeeded by his son Gerrit Petersz.
Although the church accounts list several payments in relation to the building of the Peter Gerritsz organ, it is virtually impossible to obtain concrete information about the instrument's size, construction or specification. It is also not clear whether or not materials or parts from the old organ were used again. Yet, it is plausible that the still existing main organ case, the blok chest and part of the front and inner pipes date from this building phase. The instrument was completed in 1481. Gerrit Petersz maintained the organ over the next decades. He was also responsible for the construction of a 'new keyboard', possibly a pedalboard, in 1508.

Changes to the organ in the 16th century

Gerrit Petersz died in Haarlem in 1527. His workshop was continued by his son Cornelis Gerritsz who, like his father, was an important and prolific organ builder. Cornelis maintained the main organ in the St.-Nicolaaskerk for a long time. It is striking that he possibly boarded out some of his activities to Bernt Uteneng. In 1534 Uteneng supplied a new organ for the Kruisbroederschap in the St.-Nicolaaskerk. The instrument cost 23 guilders and contained four 'sounds' (stops). It was build according to a plan drawn up by Cornelis Gerritsz. This conduct of affairs is particularly interesting considering the fact that one year earlier (in 1553) Uteneng had altered the main organ in the St.-Nicolaaskerk for an amount of 20 guiders. The amount of money, and the fact that the shutters were altered, suggest that the organ was changed both technical and external. Was Uteneng perhaps responsible for the addition of a Bovenwerk with separate stops?
More than ten years after the build of the organ for the Kruisbroederschap the main organ underwent significant alterations. These were completed in 1547. That year Cornelis Gerritsz received a payment of 186 guilders. Detailed information about the works is scarce. However, it is clear that at least the wind system and appearance of the organ were changed. 24 'ell' canvass was bought for the 'shutters' of the organ and an old 'sail' for the 'upper shutters'. It is therefore safe to assume a Rugpositief was added and that probably the shutters of the main case were altered.
Cornelis Gerritsz maintained the organ after that, presumably until his death in 1559, for a fixed amount of 1 guilder per year. In 1553 he cleaned the instrument for 4 guilders after it had been damaged by collapsing plaster and stones. For the first time is also mentioned that the organ pipes were

gnawed by rats. The problem of white lead is obviously of all times.
The build of the Rugpositief in 1547 was probably the cause of the stability problems that manifested themselves some years later: the organ case became unstable. In 1561, carpenter Cornelis Harmansz was commissioned to supply a new beam under the main organ. The instrument was surrounded by scaffolding and all pipes were taken out. Perhaps these works related to the positioning of a separate column that supported the Rugpositief. This column is visible in later drawings and pictures of the organ. These sources make also clear that the front of the main case stood almost in line with the balustrade. It is possible that this was also the case in 1481 when the console was placed on a swallow's nest. Cornelis Gerritsz must have altered this extension in order to build the rugpositief; apparently, this construction was not solid enough. It is very likely that two years later the present balustrade was build.
It is not known whether the organs in the St.-Nicolaaskerk were damaged during the iconoclasm of 1566, since the records of the churchwardens have not been preserved. From 1574 to 1576 the main organ was renovated by Peter Jansz de Swart and Jan Jacobsz van Lin, but again little is known about the exact nature of the works; only that they had cost 68 guilders. Three years later the St.-Nicolaaskerk was assigned to the Protestants. As was the case in many churches, the organs were damaged in the process. Bernt Uteneng was subsequently ordered to repair the main organ. He was allowed to use the pipes of both the organs of the Onze-Lieve-Vrouwebroederschap en de Kruisbroederschap, which were to be demolished.

The 17th century

On the 21st of December 1600, the churchwardens closed an agreement with organ builders Dirck Petersz de Swart and Jacob Jansz van Lin to alter the organ of the Nicolaïkerk, as it was called now. They received in total an amount of 575 guilders. It is generally considered that De Swart and Van Lin added an independent pedal chest with a Trumpet 8'. During the following years the instrument was maintained by the organist himself.
In 1623, Galtus Germersz van Hagerbeer started extensive but alas not defined works on the organ of the Nicolaïkerk. These were not completed

until 1625. The organ builder and his son received over 550 guilders. Besides that, works were carried out on the shutters of the organ; the shutters of the Rugpositief were decorated with new paintings. Galtus Germersz van Hagerbeer maintained the organ of the Nicolaïkerk until 1641 for a fixed amount per year. After that the organ was maintained by Godert van Pisa (1600-1648). After his death the family Van Hagerbeer took over the maintenance again, until 1663. During the following decades the organ was not maintained regularly. Repairs are known by Nicolaas van Hagen (1664) and Hans Wolff Schonat (1669).
At the end of 1672 the Nicolaïkerk was closed for worship for over a year. During this time the building was used for all kinds of secular goals. In 1674 the Nicolaïkerk was reopened for worship again. Seven years later, in 1681, the old bellows of the organ were replaced by 'new' ones coming from the organ in the former Mariakerk. These wedge bellows were made in 1641/42 by Galtus Germersz van Hagerbeer. They had only one fold and dimensions of 4 ½ x 6 foot. From this time on the archives contain several loose receipts that provide a more detailed picture of the works that were carried out on the organ.
In 1686 nobleman Emanuel Frederik van Montfoort repaired the organ and placed a Sexquialter in the Rugpositief, on the toe board of a reed stop that was removed. The Sexquialter consisted mostly of re-used pipes from the altered Mixture and Scherp. About more than a year later, in 1688, Johan Nicolaas Heerman carried out repairs in two stages. First, he worked on the middle keyboard (the Blokwerk), and he made a coupler from the Blokwerk keyboard to the pedalboard. Later he repaired the rugpositief again. Presumably these works, and those carried out by Van Montfoort, aimed to make the organ more powerful; accompaniment of congregational singing by organs was introduced in Utrecht in 1685.

The 18th century

From 1709 until 1737 the organ was maintained by Willem van Limborg; he received in return a fixed amount of money each year. During this period many repairs were carried out. In 1709 the organ was cleaned. One year later the front pipes were covered with tin foil and the second largest pipe was replaced. In addition the organ case was repainted and the column under

the rugpositief marbled. Van Limborg repaired the organ again in 1719 after it had been damaged as a result of a partial collapse of the church. Seven years later he worked extensively on the wind system and the organ pipes. Possibly the number of ranks in the Blokwerk was reduced further at that time.
The composition of the organ can for an important part be derived from the instruction for organist Pieter Hellendaal, who was appointed in 1731:

tot het principaal geluijd moet gebruijckt werden [to the main sound one must use]

in 't boven werk	prestant 4 voet
	holpijp 8 voet

the middel of blokwerk

in 't rughwerk	prestant 8 feet
	quintadeen 8 feet
	octaaff 4 feet
	mixtuur
	sexquialter

in 't pedael	trompet als hij wel gestelt is [when tuned]

de handclauwieren gekoppeld [the manuals coupled]

NB:
weijnig volk in de kerk zijnde kan het boven werk daar af getrokken worden [if there not so many people in the church, one may leave out the Bovenwerk]
heel weijnig volk het blokwerk alleen [very few people the Blokwerk alone will suffice]

This instruction is very interesting because Christian Müller also scored the composition of the organ previous to his renovation in 1733. This enumeration provides more information, especially about blokwerk and bovenwerk, but can not be entirely correct since the Mixtuur in the Rugpositief is not mentioned and the Octaaf 4' is called 2'. Both stops, mentioned in 1731, are still present today.
The most striking point of the works carried out by Christian Müller is the reduction of the number of manuals from three to two. Since then the Bovenwerk and the Blokwerk were played from the same (upper) keyboard, while also the pedal board was coupled to this keyboard. By making a cut-out valve for the Blokwerk chest (which was probably not present before) it was made possible to play the original Bovenwerk alone. With these alterations the organ technically obtained more or less the state in which it remains today. The at times very detailed receipts show that Gideon Thomas Bätz repaired and/or altered several stops in 1787, by adding chimneys and beards, especially to the Holpijp and the Quintfluit of the Bovenwerk. Also from various other years these kind of receipts are preserved. These are too detailed to discuss here further.
After Gideon Thomas Bätz, Abraham Meere maintained the organ from 1811. On two separate occasions he drew up plans to practically build a new instrument only re-using the organ cases and (partially) the organ pipes. In contrast to the Jacobikerk, were a similar plan was indeed carried out, the Peter Gerritsz organ of the Nicolaïkerk remained almost unchanged.
In 1832 the condition of the shutters was so bad that they were removed. Instead, a real drapery was put up over the organ. The organ cases were (for the last time) repainted and the front pipes once again covered with tin foil. From 1850 on, the organ was maintained by the company J. Bätz & Co; maintenance was limited to the most necessary repairs.

The organ at the Rijksmuseum

In 1867, organ builder Witte stated that it was irresponsible to repair the organ any longer. The churchwardens decided to ask what a new organ might cost and what the value of the old one as 'antiquity' might be. At that time Witte possibly alluded to a future destination of the organ in a museum. In a detailed article on the organ, which he wrote a few years

later, he stated that the organ indeed should be put into a museum. This article was published in 1881 by the Vereeniging voor Nederlandsche Muziekgeschiedenis, and eventually lead to the placing of the Peter Gerritsz organ in the then brand new Rijksmuseum in Amsterdam in 1885-1886.
In the course of this translocation, carried out by organ builder Michael Maarschalkerweerd, the bellows of the organ were lost.
In various archives many records concerning the placing of the organ in Amsterdam and the period thereafter are preserved. Among them are a number of drawings. Some parts of the organ are even shown full size.
From all this information, in particular the correspondence between all parties involved, it is, in retrospect, clear that putting a very large musical instrument like the Peter Gerritsz organ, in a museum is not the ideal solution in the long term. In a relatively dynamic institution such as a museum nowadays wants to be, these types of instruments are, sooner or later, regarded as an obstacle. This is also the reason that the largest organs (and organ cases) that were once kept in the Rijksmuseum, have long since been relocated in churches. In the case of the Peter Gerritsz organ this has moreover lead to a separation between the cases and the organ itself; The organ cases are in the Koorkerk in Middelburg, the organ 'itself' under custody of the Dutch Heritage Agency in Lelystad. This situation is of course not desirable. It should be possible at least to reunite the organ cases and the instrument.

Abstract

The Peter Gerritsz organ of de Nicolaïkerk in Utrecht is in many ways a very special instrument. It is not only the oldest preserved organ in the Netherlands, but it has a unique set of windchests as well: a 'blok' chest, a spring chest and a slider chest. The organ thus reflects the history of organ building in Utrecht from the late 15th until the early 17th century. Most of Gerritsz's activities took place in Utrecht churches. Gerritsz's son Cornelis was most probably the builder of the Rugpositief in 1547. After that, several organ builders maintained the organ, including Galtus Germersz van Hagerbeer, Christian Müller, Gideon Bätz, Abraham Meere, and J. Bätz & Co. Müller (1733) changed the organ; he reduced the number of manuals from three to two. In 1886, the organ was relocated in the then brand new Rijksmuseum in Amsterdam, by Michael Maarschalkerweerd. The Nicolaïkerk got a new organ, built by organ builder Witte; it had been Witte's suggestion not to demolish the Gerritsz organ but to save it for future generations. Today, the organ no longer is in the museum. The organ cases are in the Koorkerk in Middelburg, the organ 'itself' under custody of the Dutch Heritage Agency in Lelystad. This situation is of course not desirable. It should be possible at least to reunite the organ.

Rogér van Dijk

Rogér van Dijk studied Musicology at Utrecht University. He is an organ expert and an organ historian. Preparing the build of the reconstruction of the Gerritsz organ in the state it had in 1479 in the Orgelpark, the Orgelpark commissioned him to research relevant archival documents. Rogér van Dijk was member of the editorial board of the Dutch magazine *Het Orgel* (1997-2009), and worked for the Dutch National Institute of Organ Art (1998-2010), compiling the edition of the 15-volume encyclopedia *Het Historische Orgel in Nederland*. Van Dijk is member of the board of the Foundation Nederlandse Orgelmonografieën; he published about the Van Covelens organ at the Laurenskerk Alkmaar, and the organs at the Nieuwe Kerk Amsterdam, to name just a few examples. As an organ expert, Rogér van Dijk works for the Catholic Council for Organs and Bells. He consulted important projects, such as the reconstruction of the 19th century Ibach organ at Bergen op Zoom. Rogér van Dijk is organist at the St.-Josephkerk in Utrecht.

X

Koos van de Linde - The Original Structure of the Nicolaï Organ / An Alternative Interpretation

The construction of a replica of the former organ in the Nicolaïkerk in Utrecht, based on the situation as found in 1479 is, in my opinion, an outstanding initiative. What we principally lack in our knowledge of late Gothic organs,[1] is practical experience with the sound and with the musical possibilities presented by such instruments. The building of such an organ also obliges the maker to make choices in areas where not all details are clear and where the interpretation of surviving fragments is far from self-explanatory. This leads in some cases to highly plausible and scientifically justifiable solutions (such as, in this instance, the positioning of the Bovenwerk wind-chests on different levels) and in other cases to choices which can be tested out in practice and which consequently provide the points of departure for further discussion (such as the composition of the Blokwerk). In addition to its use as a musical instrument the organ which has been built in the Orgelpark clearly has the characteristics of a study copy. As already noted, the building of a study copy is impossible without making a number of choices regarding potentially contentious issues, thus prompting a worthwhile discussion leading others to potentially different interpretations of the same evidence.

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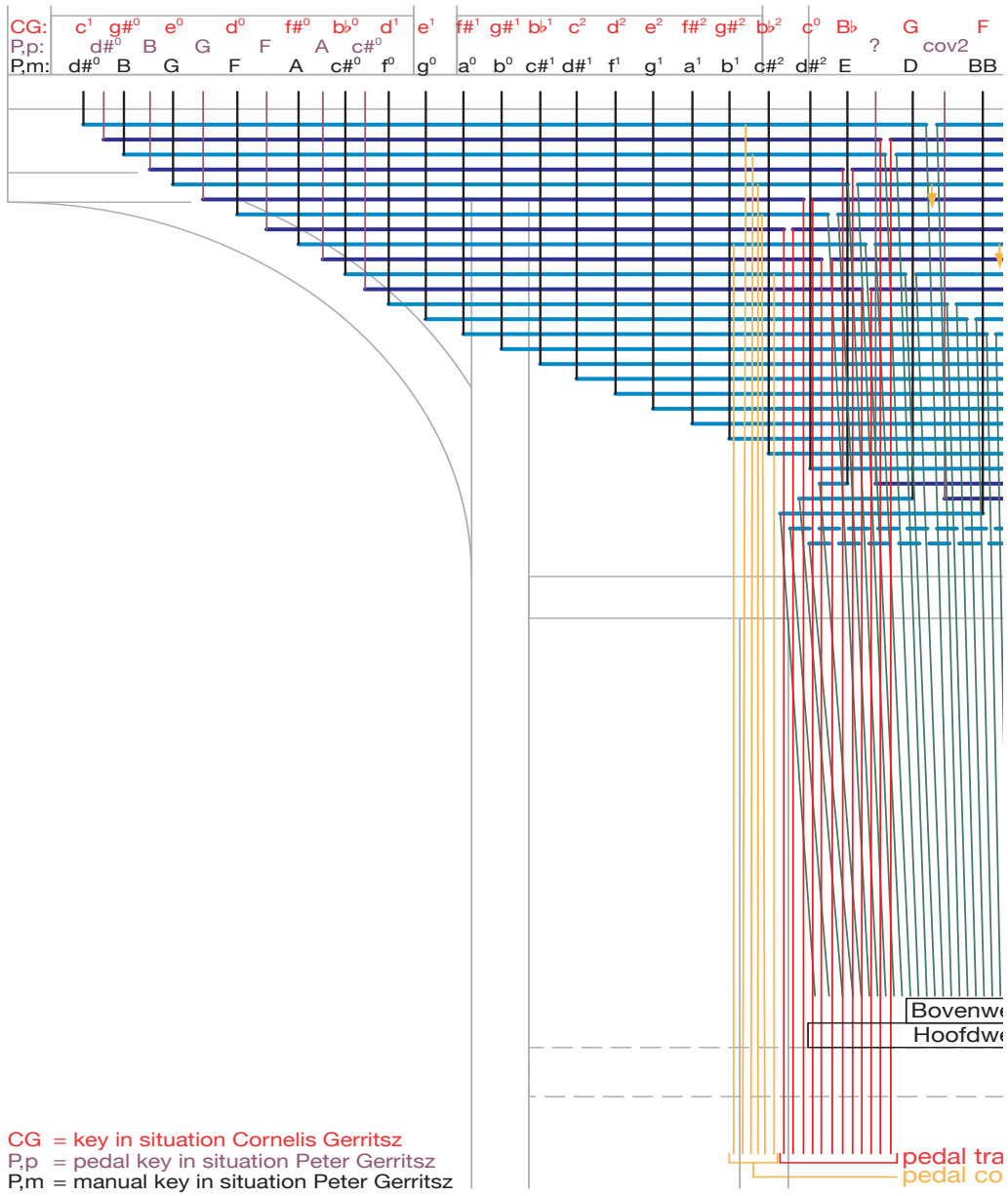
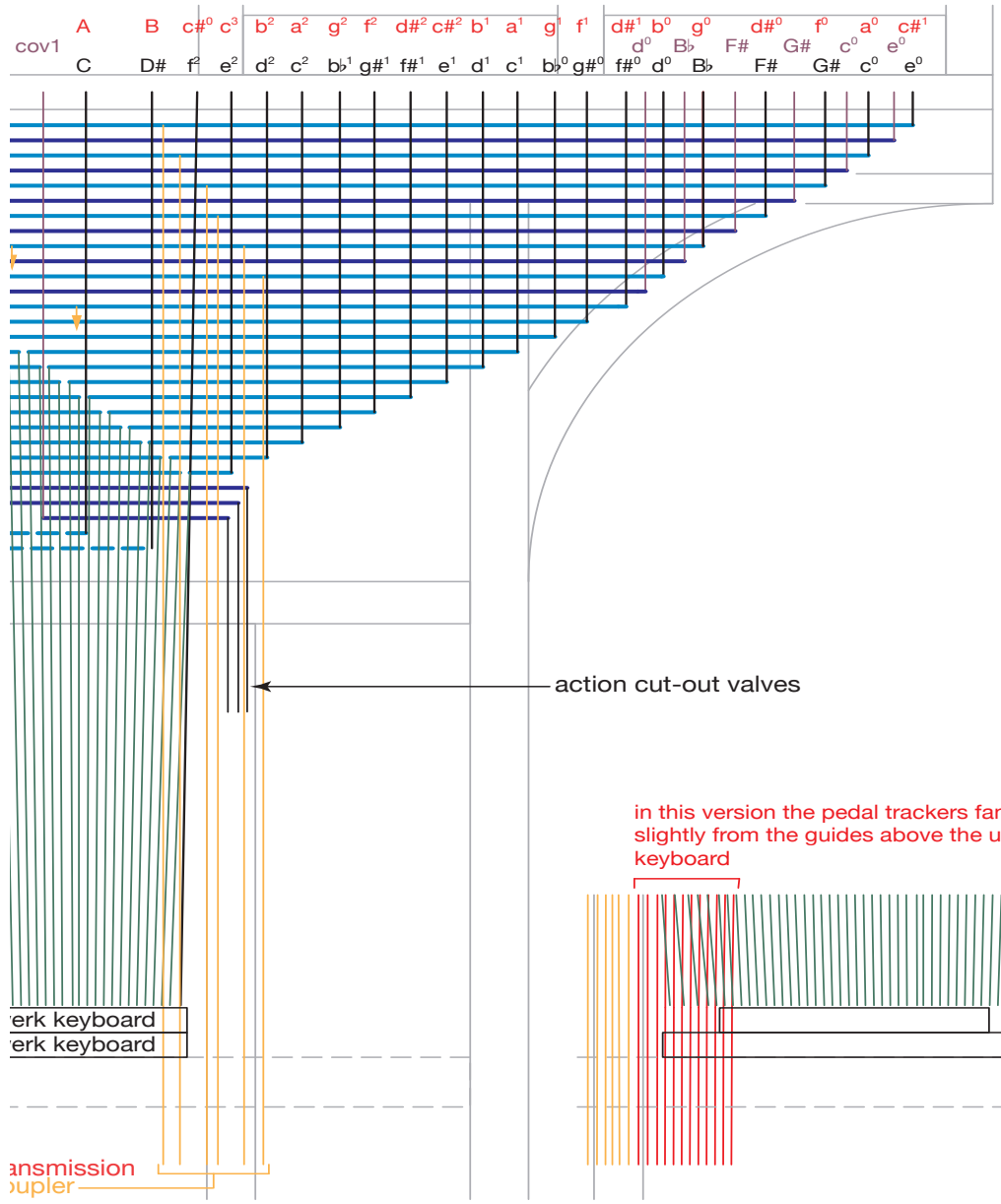
1 We would perhaps better speak of early or pre-renaissance organs, as the music for which these organs were built explicitly exhibits the characteristics of the Renaissance and the new possibilities presented by such organs were clearly intended to fulfill the requirements of this music. The label 'Gothic' can be justified in as much as these organs can still be viewed as a further development of the traditional instruments, while in the modern organs, for example those by Jan van Covelens, a break with this tradition is very much in evidence.

Figure 1

Hoofdwerk and pedal action (case structure simplified)





Within the framework of a research project undertaken by Dr. Jan van Biezen at the Rijksuniversiteit in Leiden,[2] I studied the original organ with Van Biezen in considerable detail. The results of this research, and our interpretation of the evidence, were published in Van Biezen's book *Het Nederlandse orgel in de Renaissance en Barok, in het bijzonder de school van Jan van Covelens*.[3] That the conclusions of Wim Diepenhorst, as evidenced by the construction of the study copy, are clearly substantially different from ours, prompted me to revisit our discoveries and interpretations of the evidence. In doing so, I hope to contribute to one of the most important goals of a study copy, namely an ongoing discussion, adding to the pool of collective knowledge. As the reader will discover, my present conclusions are not substantially different from those to which Van Biezen and I came to in 1995.

Specific introductory remarks

Before I explore concrete conceptual questions regarding the study copy, it seems pertinent to go into further detail regarding both the original instrument and 15th century Dutch organs in general. As far as the Nicolaï organ is concerned, I will implicitly take our interpretations of the evidence as my point of departure in order, ultimately, to be able to justify why I find these more probable than the ones represented by the study copy at the Orgelpark.

2 Translated title: *The Dutch organ in the Renaissance and the Baroque, in particular the school of Jan van Covelens*. Utrecht: KVNM, 1995 (German edition in preparation). This project had as its goal the sketching of an as-complete-as-possible picture of the renaissance organs from the Utrecht, Brabant and Holland traditions and their baroque descendants (in particular those built by the Van Hagerbeer and Duyschot families), based on material remains and archival sources. I became involved at an early stage as a collaborator of Jan van Biezen both in the "fieldwork" and in the discussions around the interpretation of the evidence and the garnering of solutions.

3 Cf. note 2. Here 58-59 and 712-715.

The original pedal coupler

In figure 1, the original layout of the hoofdwerk rollerboard is depicted in its original position in the partially sketched organ case. From this, one can note that the rollers of the original notes F-e0 of the Blokwerk manual were equipped with additional roller arms for the orange trackers in figure 1. The fact that these trackers relate precisely to the compass of the 12 pedal notes leads to the assumption that these roller arms were part of the mechanism for a pedal coupler. Indeed, it is difficult to come to any other conclusion.[4] This, then, is the first problem inherent in Diepenhorst's concept. Whilst assuming a pedal compass of FGA-f0, Diepenhorst ascribes the traces of the pedal mechanism in the lower case of the original organ to Peter Gerritsz (1479).[5] As a result, the compass of the transmitted notes in figure 1 no longer corresponds to that of the pedal and consequently, Diepenhorst assumes that the traces relate to a transmission from the Bovenwerk. In this case, the 12 additional roller arms can no longer be explained. Their compass does not relate to that of the pedal, while a coupler from the Blokwerk to the Bovenwerk would be pointless, as the result would simply be a cumbersome method of achieving what would anyway be achieved by playing on the Hoofdwerk manual.

For the sake of completeness, I should also mention that the rollers for G#, B-flat and f#0 are also equipped with additional roller arms for which we have no explanation. However, I do not see this as justification to doubt the explanation for the other roller arms, at least as long as no better explanation presents itself.

4 A possible alternative might be a second row of keys, executed as "toe pedals" and situated above, below, or as extensions of the keys for the pedal transmission. This would have simplified the mechanism. However, this would not have any influence on the principle of being able to play the Blokwerk from the pedal as well as the manual.

5 Wim Diepenhorst. "Het nieuwe Van Straten-orgel van het Orgelpark". *Timbres* 11 (2012): 23.

Why was the pedal transmission removed in the 1547 rebuild?

In 1547, the 12 independently playable tone channels of the Blokwerk were removed. Diepenhorst interprets this as an indirect confirmation of his theory of a transmission from the Bovenwerk: for the new Bovenwerk these were simply no longer necessary. In the case of there having been a pedal transmission there is an equally probable justification for their abandonment. In the new situation the tone channels in question related to the notes d0-c#1 if assuming a 16′ basis, or D-c#0 if assuming an 8′ basis. In either case the result would have been a pedal compass of limited use anno 1547.

The compass FGA-f0 from the perspective of the pedal function in 1479

In various contracts dating from the construction of the original Nicolaï organ, "bourdonnen" are mentioned.[6] These were seemingly intended to play bourdon (drone) notes and one can assume that they were played via the pedals. From contracts, such ranks of bourdon pipes mostly had a compass of 10, or sometimes 12, notes. 10 notes tallies with the compass FGA-e0. A compass of 12 notes would suggest a fully chromatic octave, such as F-e0.[7] Seemingly, ranks of bourdon pipes never repeated notes, as, for the playing of drones, this would have been an unnecessary luxury.[8] From this perspective, a compass of FGA-f0, as assumed by Diepenhorst, seems less likely for a pedal division constructed in 1479. It is, however, a far more likely compass for a pedal pull-down in 1547, no longer connected to bourdon pipes. Many Gregorian melodies fall within this compass.[9]

6 For example 's-Hertogenbosch 1498 (Hendrik van den Houwe) and Antwerpen 1505 (Daniël van der Distelen jr.), for a more extensive survey see Van Biezen: cf. note 2. Here 38-39.

7 In the Antwerp contract with Daniël van der Distelen, which pertains to an F organ, no compass other than F-e0 is conceivable.

8 Many Italian Contrabassi and Spanish Contras from later dates likewise have no notes repeated on the wind-chest.

9 "Veni creator", "Regina coeli", etc.; in usual transpositions (such as by Sweelinck) also "Christe qui lux es et dies", "Da pacem", etc.

Manual transmissions in early organs

While pedal transmissions are known at least in the 16th and 17th centuries, not a single trace of a transmission between one manual and another, either from written sources, or from the remains of organs other than the Nicolaï instrument, has been found. Even the idea that one would accommodate the lowest octave of a single stop in the positive division elsewhere in the case, is without evidence. That expressions such as "bourdonnen […] luydende met den positive" ("Bourdons [...] sounding with the positive") are not relevant in this case is evident from the Antwerp contract with Daniël van der Distelen, dating from 1505, in which it is noted regarding the bourdons that "ende die sal men sluyten alsmen wilt" ("one shall be able to close [cancel] them should one wish to").[10] From this it is evident that the writer is speaking of an independent stop and not the extension of an existing one. The absence of manual transmissions is not at all remarkable if one considers that a manual division in this period was an independent entity with its own position within the organ case. This was not the case with the pedal. From a technical perspective, such a transmission would result in disagreeable complications. In order to cancel the Doof stop, the organ builder would have been obliged to provide a coupler mechanism solely for the lowest octave and working simultaneously with the cut-off valve for the Bovenwerk chest. The practical execution of this mechanism in the study copy makes a barely convincing impression within the concept as a whole, appearing especially incongruous in the otherwise very straightforward and efficient layout of the action.

The octave span of the manual keyboards

On the basis of the rollerboard, the width of an octave at the keyboard of the original Nicolaï organ can be estimated at ca. 224 mm. This unusually wide octave span is probably the result of the rollers for two adjacent keys being placed on the same row. The slightly tilted course followed by the roller arms in the direction of the studs lends further weight to this hypothesis. The distance between the limits of the console opening does not allow such

10 Cf. note 2. Here 39.

a broad keyboard. Even if, like Diepenhorst, one assumes that no key cheeks were present, the opening accommodates an octave span of barely 190mm. In fact, one cannot deduce the width of the octave at the keyboard from the dimensions of the rollerboard, as Diepenhorst asserts.[11] This is not a situation unique to this organ; there are quite a few other examples. Probably the most relevant in our case is that of the Hooglandse Kerk in Leiden.[12] There too, the width of the octave on the preserved fragment of the original rollerboard suggests an octave span far greater than can in fact have been the case.
If the division of the rollerboard has indeed no direct relation with that of the keyboard and the trackers are in any case required to fan out from the keyboard to the rollerboard , it is not necessary to assume that there were no key cheeks. The Alkmaar choir organ (Jan van Covelens, 1511) features these and they are equally conceivable on the Nicolaï organ, built some 30 years earlier. In that case the original keyboards were not significantly broader than the present 18th century ones from Müller. Both have 26 natural keys. Figure 1 is based on an octave span of 170mm and the presence of key cheeks.[13] However I can prove this situation no more than Diepenhorst can prove the presence of his broader keyboards.[14]

The position of the keyboards in relation to each other

There are indications that, in the instances when the Hoofdwerk of organs from the Van Covelens school, or built by Galtus and Germer van Hagerbeer, was an octave longer than the compasses of the other manuals, the keyboards were positioned symmetrically, thus being out of alignment with each other.[15] The f of the remaining keyboards was, in such cases, aligned

11 Cf. Note 5. Here 23.

12 Cf. Note 2. Here 649.

13 Such as in Alkmaar (Van Covelens organ) and Amsterdam, Nieuwe Kerk (small organ).

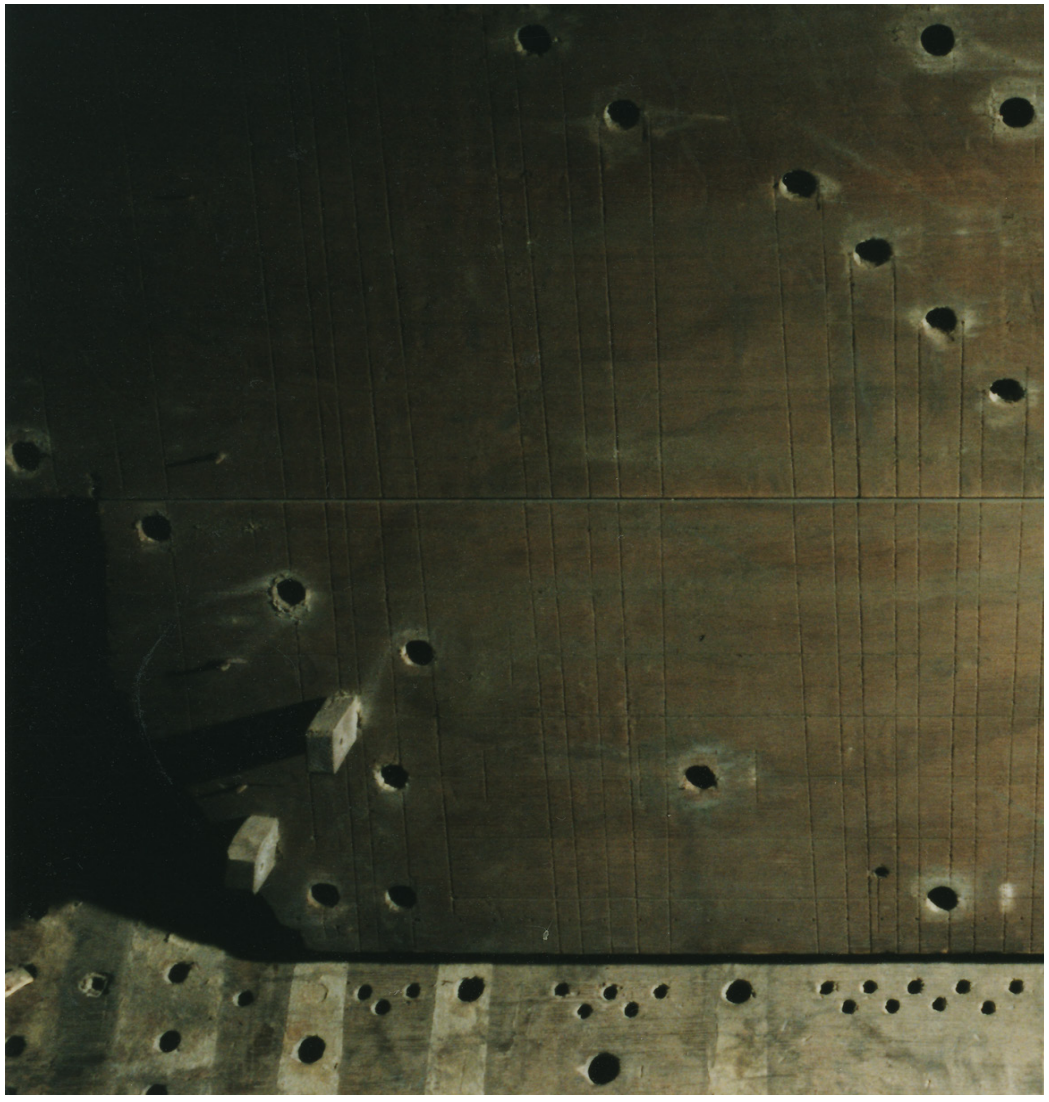
14 Henceforward I will refer to the 190mm octave as the "wide" octave and the 170mm octave as the "narrow" octave.

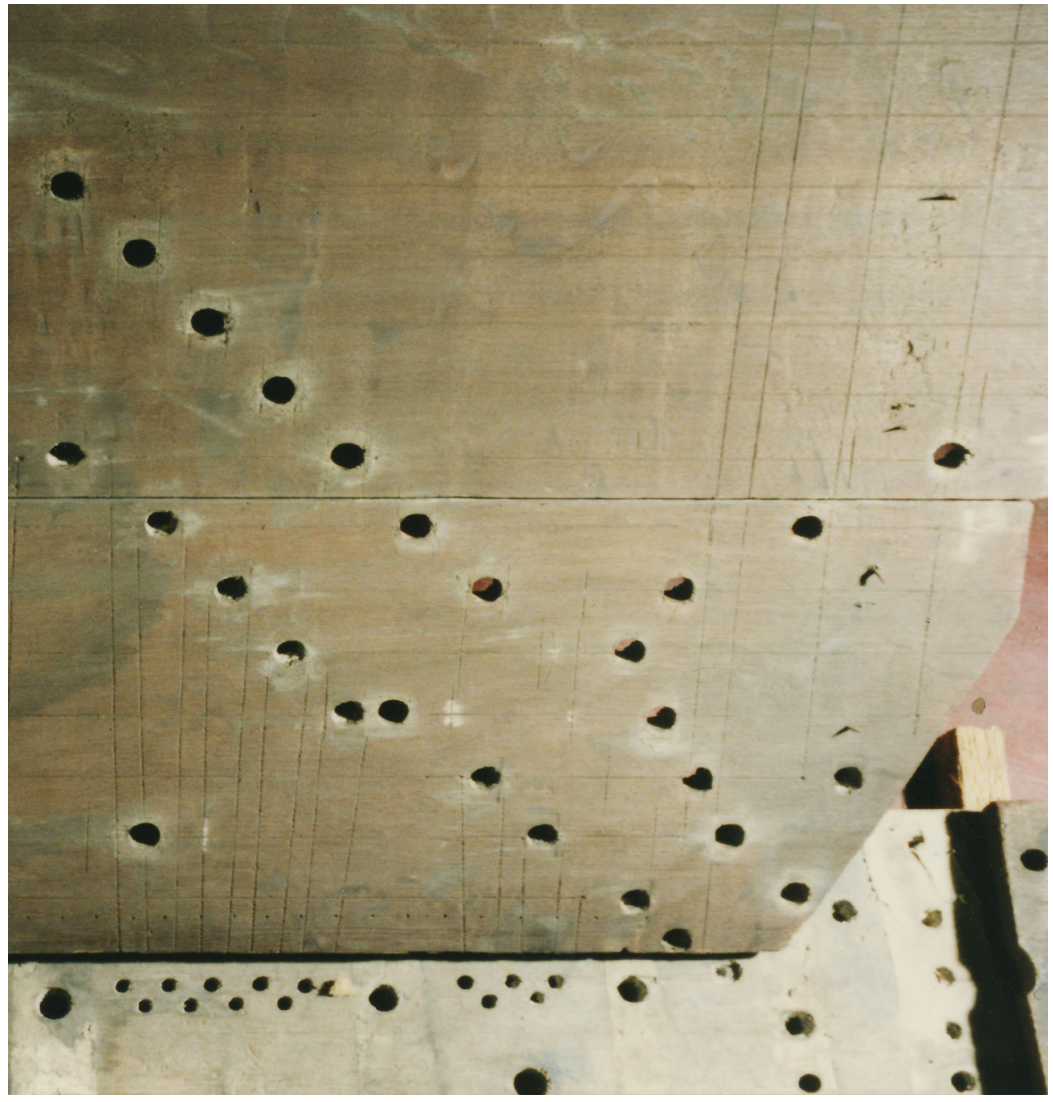
15 Cf., among others: Koos van de Linde. "Organs in Sweelinck's time". *Sweelinck Studies / Proceedings of the Sweelinck Symposium.* Utrecht 1999/2002: 204-205.

with the c of the hoofdwerk. Would this not also have been the case with the Nicolaï organ?
The action of the Bovenwerk passes through the wind-chest of the Blokwerk via 32 small holes, of which 30 or 31 must have been in use for the key-action. The holes are located between the tone channels for the lowest notes in the central tower. The distance between the first and the last hole is larger than the width of the Bovenwerk keyboard in the case of the compass B-f2 and, as a result, the trackers have to fan out. If we position the keyboard in such a way that the first and last of these trackers are equally tilted, the f of the Bovenwerk keyboard is positioned above the d of the Hoofdwerk,[16] a rather unattractive idea! I shall label this situation "D".
If, on the other hand, we position the keyboards in such a way that the trackers, tilting to the furthest left and the furthest right (e0 and e2 respectively) have approximately the same slope, then the f of the Bovenwerk keyboard will be positioned above the c of the Hoofdwerk. In this situation, the average slope of the trackers proves to be the smallest possible. This positioning leads also to the best possible symmetry; the Hoofdwerk keyboard protrudes to the left by four naturals and to the right by three. It is therefore quite possible that the keyboards were positioned in this way in relation to each other. I shall label this situation "C".
However, the reasoning behind this possibility cannot be used to argue against a possible "normal" situation (corresponding keys above one another). Displacement of the holes in the direction of the treble of the keyboard provides no improvement in the situation[17] for the most inclined trackers because the spacing of the tone channels of the Blokwerk chest is significantly narrower there (see figure 2). Here is only place for one hole between two tone channels. As a result, a shift of only a few holes results in a rapidly increasing inclination of the trackers of the highest notes. It is therefore not certain that, in the case of a "normal" keyboard alignment Peter Gerritsz would have used differently positioned holes in the Blokwerk chest.

16 This is the case, as is the following alternative, for both possible octave spans.

17 In both cases, the angle of the most inclined tracker would be ± 4° to the side. This would be acceptable, even when taking into account that the trackers are inclined to the back as well.



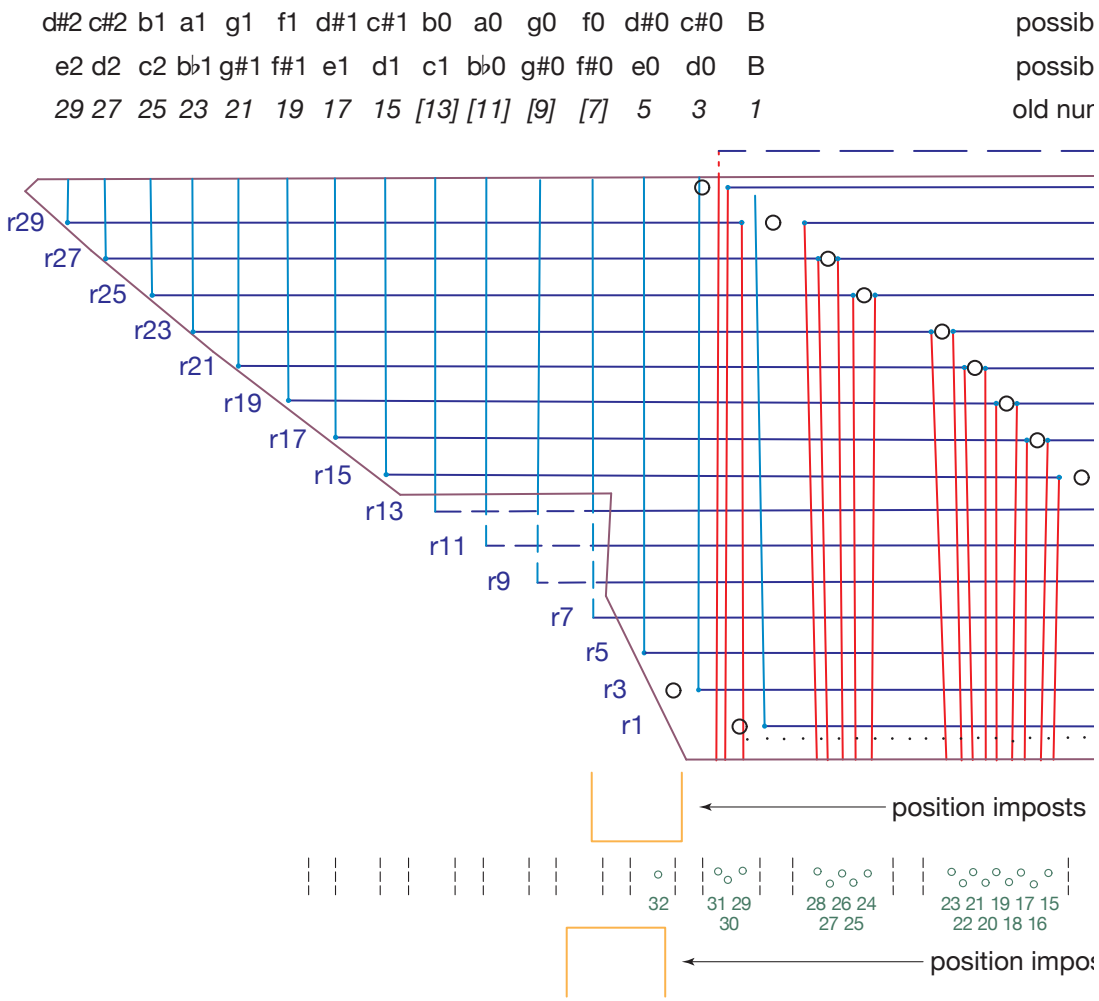


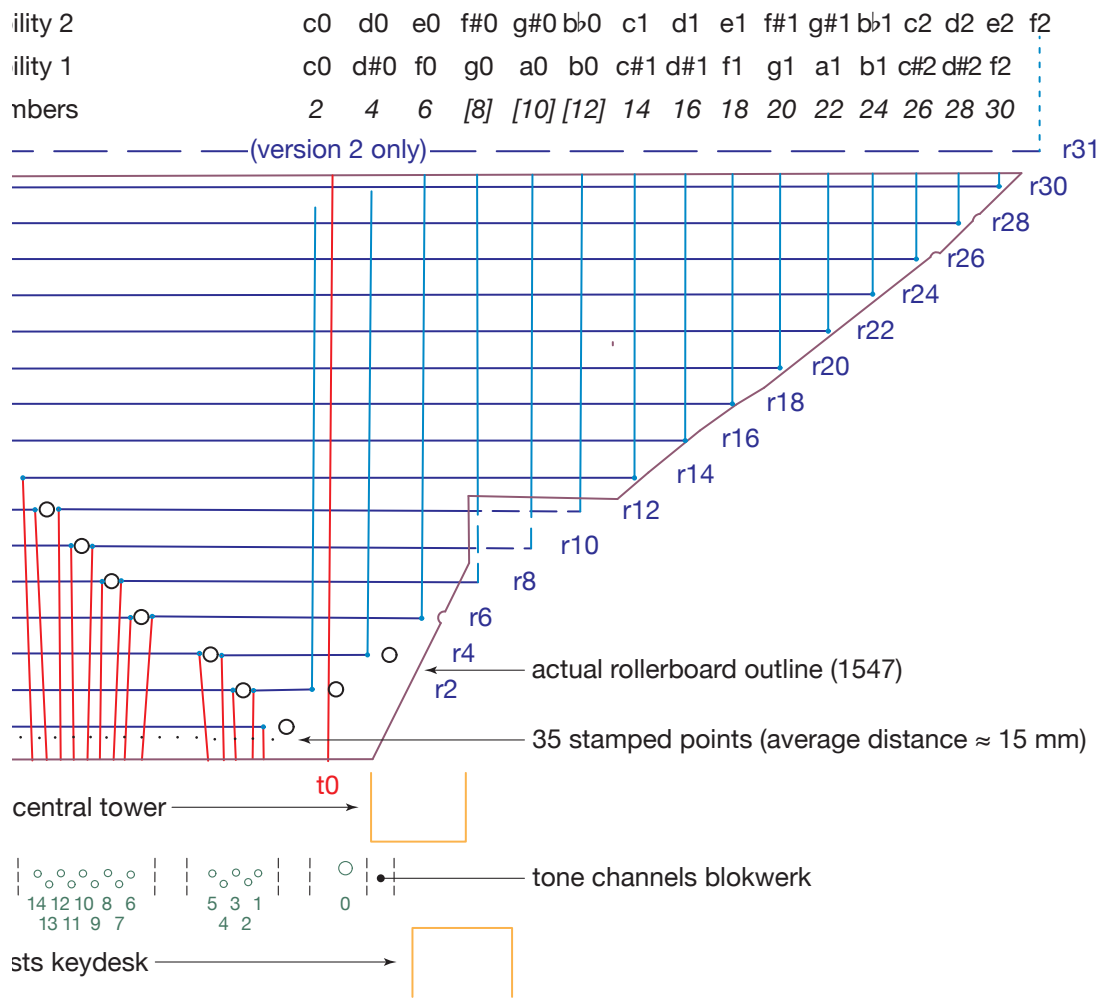
Bovenwerk rollerboard

The scribed lines on the Bovenwerk rollerboard correspond with 31 of the 32 small holes in the Blokwerk chest

Figure 2

Rollerboard Bovenwerk 1479 and holes in the Blokwerk chest





The relationship between the Hoofdwerk and the Bovenwerk

If we investigate the specifications of early Dutch organs with Bovenwerk divisions,[18] one notices that the lowest note of the Doof (the fundamental rank) sounds at least an octave higher than the lowest note of the Blokwerk. This situation remained in the renaissance organs of the Van Covelens school. The first instrument built in this tradition to break the mould was, as far as I am aware, the organ in the Dom in Utrecht, built in 1571 by Peter Jansz. de Swart, on which the Bovenwerk had an 8' basis and the Blokwerk a 12' basis.

On this basis, the concept adopted by Diepenhorst (both manuals being 8' based) would have been an exception. In order to defend this concept one would have to resort to the casuistic ad hoc hypothesis that a unison rank in the modern sense (i.e. 8'/6') was indispensable on a Dutch Bovenwerk. In that case, a Bovenwerk sounding an octave higher than the Hoofdwerk would only be acceptable if the Hoofdwerk had at least a 16'/12' as fundamental rank. In all comparable organs this is the case. The smaller Nicolaï organ would hence represent the only exception.

The F compass in the Utrecht school

Bovenwerk keyboards beginning on F were not exceptional in the 15th century. If we discount rebuilt organs,[19] F# and G# are almost systematically absent. The organ in the Jacobikerk in Utrecht is especially relevant to the Nicolaï organ. This instrument was built by Gerrit Petersz in 1504-1509. Its Bovenwerk began with the notes F, G and A, without F# and G#. This 16' organ was 30 years younger than the 8' Nicolaï organ, substantially larger, and more prestigious. With its treble compass reaching as far as g2a2 rather than the more traditional f2, it was also more modern. Countless earlier examples, stretching back prior to 1450, illustrate that the absence

18 Cf. Note 2. Here 40-60 and 114-131. Of course only the compasses which are not indicated between square brackets are relevant. In situations open to interpretation, after repeated evaluation of the sources, I see no reason to revise our conclusions.

19 Cf. the organ in 's-Hertogenbosch, where the present G# is the result of adapting a B organ in G tuning to become an F organ in C tuning.

of the notes F# and G# was an established tradition rather than a modern phenomenon. If the hypothesis of a Bovenwerk transmission is correct, the Bovenwerk of the Nicolaï organ must have had the notes F# and G#. How could this be the case, given the absence of these keys in the newer organ in the Jacobikirche? It is difficult to assume that Gerrit Petersz took a "backward" step with regards to the work of his father. He may have been conservative but he was no reactionary. An additional problem in the context of the Nicolaï organ is the fact that the pedal in Diepenhorst's concept could not have had the notes F# and G#. This runs entirely contrary to the written evidence. While a chromatic bourdon octave is occasionally recorded, there is barely, if any, evidence for a complete bass octave from F in the Bovenwerks of non-rebuilt organs.

The compass of the old Bovenwerk wind-chests of the Nicolaï organ

As has been mentioned above, a series of 32 small holes (Ø=6 mm) is located in the middle of the Blokwerk chest between the central tone channels. Where multiple holes are located adjacent to each other, a zig-zig pattern is formed, probably to ensure sufficient wood between the holes.[20] The holes 1-31 correspond with scribed lines we encounter on a preserved section of the old Bovenwerk rollerboard (see photo). Obviously the Bovenwerk action of 1479 passed through these holes.

The old rollerboard was partially re-used in 1547 by Peter Gerritsz' grandson Cornelis in his new Bovenwerk rollerboard. Cornelis mounted new studs, in different places to those previously present. Material was sawn away at the sides whilst the underside remained, most likely, unaltered. The absence of holes for original studs (which, given the distance between the rollers, could not have completely disappeared) indicates that no rollers are missing. A series of 35 piercings, executed with a mandrel at an average distance of 15.1 mm, suggests an intact underside. The old inscriptions on the upper side seem to suggest that no substantial part is missing, although we cannot be certain. For Cornelis' extension of the rollerboard, a small piece of the upper edge seems to have been removed but how broad this was can no longer

20 I see no reason to adopt the theory that hole 32 was added later.

be determined. The positions of the trackers and rollers on the rollerboard are marked with crosses. A schematic drawing can be seen in figure 2.
From the pattern of the tracker markings on the one hand and the holes in the Blokwerk chest on the other, it seems that what Diepenhorst thought probable,[21] is in fact beyond doubt: the rollerboard hung with its rollers facing the back wall of the organ case. The rather obvious fact that the rollers were positioned on the side, on which the markings are to be found, is confirmed by the Hoofdwerk rollerboard.
The pattern of the rollerboard indicates that the Bovenwerk was laid out on separate C and C# wind-chests. The lowest notes stood on either side of the central tower and the tone channels proceeded outwards in whole tones. The distance between the tone channels in the Bovenwerk wind-chests decreased slightly from ca. 47 mm between the first two to ca. 36 mm between the 13th and 14th. The distance between the 14th and 15th is significantly smaller (ca. 32 mm). These variable distances suggest that the tone channels, like those of the Blokwerk wind-chest, were carved out of solid timber.
On the upper side, adjacent to the lines indicating the positions of the tone channels, old key numbers are visible. The numbers run from 1 to 30 and correspond with the trackers which pass through the first 30 of the previously discussed holes in the Blokwerk wind-chest. In the context of the possible Hoofdwerk compasses, this would seem to suggest a Bovenwerk compass of B,c0,d0-f2 (see possibility 1 in the illustration). With this compass, the C and C# sides correspond largely with those of the Hoofdwerk. This, however, raises the following problems:

- What is the function of hole 31? The corresponding line on the rollerboard (t 31) has no equivalent roller. If we assume this line marked the passage of a tracker, it is unlikely that this tracker corresponded with a normal tone channel. The tracker would have terminated between tone channels 1 and 3 and, given that the tone channels were separate by just 47 mm, there is no room for an extra one between them under

21 Henk Verhoef (ed.), *Het oude orgel van de Nicolaïkerk te Utrecht / Kroongetuige van de Nederlandse muziekgeschiedenis*. Nederlandse Orgelmonografieën 10 (Zutphen 2009), 239.

normal circumstances.[22] It is also hard to comprehend why one would have provided an extra tone channel whose presence would have upset the existing pattern so fundamentally. There was plenty of room for the extra tone channel in the case. It cannot be ruled out that a fragment of the upper side of the rollerboard, accommodating an extra roller, has disappeared. As this roller was clearly not located on the same row as key 30, one must assume that the hypothetical roller 31 pointed in the same direction as roller 30. This becomes a possibility if we assume that c#0 was present and, drawing on the analogy with the Hoofdwerk, e2 and f2 were located side by side (see possibility 2).
- However, this seemingly elegant explanation leads to an inelegant exchanging of C and C# sides in comparison to the Hoofdwerk. In the light of the slightly asymmetrical case and the rather slowly diminishing

22 The tubes in the back of the feet of the Cornelis' hanging frontpipes of the Bovenwerk (1547) have a diameter of about 18 mm for the largest and 12-13 mm for the smallest. There is no reason to assume that the tubes of the original ones were substantially different. Apart from the three lowest notes, the tone channels of the Blokwerk are never narrower than the diameter of the largest hole. One could therefore assume that the largest tone channels of the Bovenwerk chest were about 18 mm wide. On the lowest note of the Blokwerk the tone channel width is about 80% of the diameter of the largest hole. Even if this was also the case on the Bovenwerk, the largest tone channels were 14-15 mm wide, which is also the width of the smallest pedal tone channels. The pallets of those channels are 10 mm wider than the channels itself.
If one assumes a similar situation in the Bovenwerk, the space between the two largest "regular" tone channels would measure 47 (the distance between the centres of the channels) – 14 (the width of one tone channel) = 33 mm. The free space between the pallets would then be 33 – 10 (the difference between channel and pallet width) = 23 mm. Given a required minimum distance between two pallets of 2 mm the maximum with of the pallet of the assumed "tone channel 31" is 23 – 2 × 2 = 19 mm. Thus the channel itself cannot be larger then 19 – 10 = 9 mm. For an additional low note this is not conceivable. Even for the highest notes such a narrow channel is improbable. Within the whole compass of the Bovenwerk (and even from F onwards) the channels of the Blokwerk have a relatively uniform width. If the largest channels of the Bovenwerk were only 14 mm wide, why should the situation have been different there? (If the largest channels were wider there would be no place at all for an additional channel, it would be absurdly narrow.)

pipescales, this is more than a trivial inconsistency. Indeed (see table 1), on the side of the organ with the most available space in the façade, the fewest pipes are accommodated (see table 1).[23] Why set out the two divisions with inverted windchests if this has disadvantageous consequences? In addition, the already described inscriptions on the rollerboard, which one would expect to find on the edge, render the hypothesis of a missing roller unlikely. And are the analogous positions of the lines nos t31 and t0 really coincidental?

- The vertical line t0 is located more or less above the deviating hole 0. The relationship between hole and line seems self-evident, but due to their relatively poor corresponding positions, caution is called for. If vertical line t0 corresponds to the passage of a tracker, such a tracker would not terminate in a normal tone channel, for the same reasons as is the case with line t31 in the reverse situation.
- Hole 32, on the other hand, does not correspond with any scribed line on the rollerboard. This hole could be considered to relate to the line t0 by assuming that a piece with a missing roller has been lost from the lower side of the rollerboard. As we have already seen, this is unlikely. Moreover, the logic of the rollerboard would suggest that this hypothetical missing roller would have been located on the upper side. A useful compass of 32 notes beginning on B is difficult to imagine. As these problems play no role in connection with the study copy, I will withhold further comment until the end of this article.

To conclude the original Bovenwerk compass seems to have been B-f2, possibly including the note c#0. In adopting the first solution, the function of hole 31 appears to be clear but the ordering of the c and c# sides seems incomprehensible from the perspective of the available space for the façade

23 If the pipe scales on the Hoofdwerk were to continue in kind, the 16 pipes on the C side would in any case not fit in the façade and f2 would have to be located within the case. In this instance the C and C# sides being "inverted" between the two divisions becomes logical, but then there is no plausible reason any more for the locating of f2 on the C side.

Table 1

Total width frontpipes Bovenwerk if compass is B-f2 with c#0

C-side HW				C♯-side HW			
key	outer Ø			key	outer Ø		
	(1)	(2)	(3)		(1)	(2)	(3)
B	48,8	48,8	48,8	c^0	47,2	47,2	46,8
$c♯^0$	45,7	45,7	44,9	d^0	44,2	44,2	43,1
$d♯^0$	42,8	42,8	41,4	e^0	41,5	41,5	39,8
f^0	40,2	40,2	38,2	$f♯^0$	39,1	39,1	36,8
g^0	38,0	38,0	35,5	$g♯^0$	36,9	36,9	34,2
a^0	36,0	36,0	33,0	$b♭^0$	35,0	35,0	31,8
b^0	34,2	34,2	30,8	c^1	33,3	33,3	29,8
$c♯^1$	32,6	32,6	28,8	d^1	31,8	31,8	27,9
$d♯^1$	31,1	31,1	27,0	e^1	30,5	30,5	26,2
f^1	29,9	29,9	25,5	$f♯^1$	29,3	28,6	24,8
g^1	28,7	27,4	24,0	$g♯^1$	28,2	26,3	23,4
a^1	27,7	25,2	22,7	$b♭^1$	27,3	24,2	22,2
b^1	26,8	23,3	21,6	c^2	26,4	22,4	21,1
$c♯^2$	26,0	21,6	20,7	d^2	25,6	20,8	20,2
$d♯^2$	25,3	20,0	19,8	e^2	24,9	19,3	19,4
				f^2	24,7	18,7	19,0
sum	514	497	463	sum	526	500	466
s.i.(*)	539			s.i.(*)	528		

(1) Scales Bovenwerk = scales Hoofdwerk, no break at Bovenwerk f^1
(2) Scales Bovenwerk B-f^1 = scales Hoofdwerk; Bovenwerk $f^2/f^1 = 5/8$
(3) Scale Bovenwerk B = scale Hoofdwerk b^0; Bovenwerk $b^0/B = 5/8$

(*) Space between the imposts

pipes. In adopting the second solution, the c and c# sides of the Bovenwerk chest correspond with those of the Hoofdwerk and everything corresponds with the preserved elements of the rollerboard. However, the function of

both hole and tracker 31 becomes unclear. Nevertheless, this second solution seems more probable to me. An F compass in the original G(+1)-tuning can be ruled out. The positions of the known tone channels seem to correspond with the façade and in this case the largest pipes would not fit. In addition, neither FG-c2 (in the case of a 30 note compass), nor FGA-d2 (in the case of a 31 note compass) seems plausible.
For hole 32 I have yet to establish an obvious explanation. One or two of the "problematic" holes 0, 31 and 32 may have provided passage for the stop action of a Cimbel. In terms of the presence of a slider for such a stop, the study copy seems to me to be correct.
The study copy also assumes a compass of B-f2 for the Bovenwerk wind-chest. This means that neither the Positie nor the Cimbel can share the complete compass assumed by Diepenhorst for the Doof. As in the current concept this stop is transmitted from the Blokwerk from F to e0, the independent part of the Doof on the Bovenwerk windchest only begins on f0. For this reason Diepenhorst has decided that the Doof's wind-chest should also begin on that note. The result is that the Cimbel, which stands on the same windchest, can only begin on the same note too. The three stops each have, therefore, a different compass: the Doof begins on F, the Positie on B and the Cimbel on f0. In the case of the Cimbel, this would have been unnecessary, as one could have commenced the Doof chest on B, with the notes for B-e0 serving exclusively for the Cimbel. This would, admittedly, have had the consequence of each key acting on three pallets with predictable results for the touch and regulation of the action.
In any case, the resulting situation deviates from all other known relevant instruments.[24] As far as we know, the Positie always began on the same note as the Doof. This is understandable when we consider that the Doof was initially a stop extracted from the plenum (its name, meaning "dull" or "muted", testifies to this). Regarding Cimbels, we have less information, but there is certainly no evidence that they began higher in the compass. The

24 The plausible parallels with 's-Hertogenbosch take into account only the specification and construction of the two wind-chests, and not the compasses of the chests. The Positie on all the instruments described by Arnaut de Zwolle began on the lowest note.

Cimbel in the specification recorded by Anonymus III in the manuscript of Arnaut de Zwolle,[25] which (correctly) served as the model for the study copy began at any rate on the lowest key, even if it provided just a high fifth on the lowest keys (F-B) as the next rank above the top rank of the Positie. The current limited compass of the Cimbel renders its use problematic.

The general concept of the study copy

One of the most important points of departure is seemingly the hypothesis that the transmission acted on the Bovenwerk rather than on the Pedal. As justification for this choice, only the traces of a pedal keyboard have been mentioned.[26] Part of the problem of Diepenhorst's point of departure has already been discussed. For the sake of clarity, here is a brief summary:

1 The traces of the old pedal coupler can no longer be definitively identified as such. No plausible alternative presents itself.
2 Due to the established compass of the Bovenwerk windchest, the Positie and Cimbel cannot commence on the lowest note of the keyboard. This does not correspond with what we know of any other relevant instrument. The same is true with regard to the fact that the Cimbel begins on a different note than the Positie.
3 Transmissions of pipes from the Hoofdwerk to the Positief/ Bovenwerk are not known from any written source or from traces of any preserved instrument.
4 There is a discrepancy between the compass of the pedal, noting the absence of F# and G#, and the chromatic lowest octave of the Bovenwerk beginning on F. One would normally expect the reverse.
5 A Positief/Bovenwerk based on the same pitch as the Hoofdwerk is unknown in any other relevant instrument.
6 Likewise a Pedal with pipes located directly against the back wall of the case is unknown. This would be more characteristic of alterations, especially those made in the 19th and 20th centuries.

25 Cf. Note 2. Here 34-35.

26 Cf. Note 5. Here 23.

Points 1-4 are the most important serious. Point 5 can be partially explained in the context of the previous mentioned “small organ hypothesis” and only point 6 can be eliminated altogether by housing the Bourdon pipes in the lower part of the organ case. Every one of these problems disappears if we assume that the transmission acted on the original pedal and the compass of the Bovenwerk keyboard simply reflected that of its windchest:

1 The transmission tone channels were part of the pedal compass and the extra rollerboard arms for a coupler from the Blokwerk to the Pedal. Without the coupler being engaged, the pedal keyboard played just the two lowest ranks. With the coupler engaged it played the entire Blokwerk. This kind of coupler has a clear purpose: without it there is no way of playing the entire Blokwerk with the feet. The alternative hypothesis of a double row of pedal keys rather than a coupler would result in the same musical possibilities, and explains the surviving traces equally well.
2 The Doof, which I believe to be a 4’ stop, could stand in the façade, fitting perfectly if we assume the compass to have no c#0. Each stop has the same compass.
3 Pedal transmissions are known to have existed in the 16 and 17th centuries and are therefore also plausible in 1479.
4 In this case, there is no longer a discrepancy in compass. The traces of the pedal keyboard in the lower case can be attributed to Cornelis Gerritsz.
5 The pitch relationship between the two manual divisions conforms with the other organs of the period about which we have information.
6 There are no longer unencased pedal pipes outside the organ case.

The evidence for the presence of a manual transmission

As it is accepted good practice in science to consider possible counter-arguments to one’s own theory, I will now try to ascertain the facts Diepenhorst may have considered, in addition to the already mentioned pedal keyboard, traces in the lower case, as the basis for both a manual transmission and a Bovenwerk beginning on F. In order to do so, we must once again consider figure 1, ignoring briefly my addition of a Bovenwerk

keyboard in a “normal” position. We can observe that the red trackers to the Bourdon pipes mostly pass through the keys of the Hoofdwerk keyboard in order to connect with the pedal keys. If we were to allow these trackers to progress at an angle in the same way as those of the Hoofdwerk (here in green), they would remain comfortably within the extremes of the keyboard and could perhaps even be joined to the manual keys. If we now imagine the Bovenwerk keyboard in position D with its compass extended by the natural keys F, G and A, the Hoofdwerk keyboard is then two natural keys longer at each end. Perhaps Diepenhorst considered the elegant symmetry of this situation, in combination with the position of the trackers for the Bourdon pipes to be additional evidence for the presence of a manual transmission? One cannot deny that Diepenhorst’s theory nullifies the only inelegant aspect of the interpretation presented here. Why did Peter Gerritsz send his pedal trackers directly through the keys of, at least, the Hoofdwerk keyboard? Even when they pass completely straight through the keys, the addition of guides above the keyboards is essential, otherwise ciphers are unavoidable. When one considers the path taken by the trackers for the coupler and for the bourdon pipes, one must conclude that Peter Gerritsz must have had a reason for avoiding the area outside the imposts at both sides of the keyboards. In doing so he had no choice but to send the trackers through the keys. The least problematic solution would have been, as indicated in figure 1, to position the Bovenwerk keyboard in the ‘normal’ position. In this situation, he would have succeeded in keeping free the area in which the Bourdon trackers passed.[27] In the situation which I have sketched, this is impossible at the treble end. The alternative illustration, with the keyboard in position C is only possible with a smaller octave span. In this case, two trackers at the bass end are obliged to pass through the keys of both manuals.

Unfortunately, the reason for keeping free the area outside the imposts at both sides of the keyboards remains unclear. Was there a passage planned here, such as we can see on the south side in the situation of 1547? This

27 The illustrated situation assumes the application of the narrower octave span, but even if the wider option is applied, the critical area remains free.

remains a matter for speculation. However, the absence of a clear reason is not valid as a counter-argument to our theory. In fact it is precisely the two trackers which pass through the keyboards at the treble end which illustrate why one cannot draw too extreme conclusions from the same phenomenon occurring in the bass.

The composition of the Blokwerk

The composition of the Blokwerk with its "growling" low fifths is not without its problems. Just as with the concept as a whole, the composition betrays a number of characteristics which have few, if any parallels with other organs from the period. In order to convey some impression, I will compare this Blokwerk with those of the organs described in the treatise of Henri Arnaut de Zwolle:[28]

1 *Salins:* the second of three seemingly conservative organs, described on f. 131v.
2 *HA3:* the third organ described on this page, with the lowest Blokwerk composition.
3 *Dijon:* the organ in the church in Dijon, described as "old" by Anonymus III (2nd half of the 15th century).
4 *Anon. III:* the apparently modern organ already mentioned in connection with the Cimbel and described by Anonymus III on f. 133v-134r. In order to aid a better comparison with the Nicolaï organ, the compass will be given, contrary to Van Biezen, as FGA-f3 on an 8′ basis.

The comparison illustrates the following:

- The presence of a fifth immediate above the unison rank, here 5 1/3′, is known only from a limited number of Blokwerk compositions. From the above mentioned organs, we encounter it on any significant scale only in the conservative instruments HA3 and Salins.

28 Henri Arnaut de Zwolle, *[description of organbuilding, Dijon, ca. 1440, with additions from the second half of the 15th century]*, Paris, Bibliothèque Nationale ms. Lat. 7295. Facs. Paris 1932, eds. G. Le Cerf & E.-R. Labande.

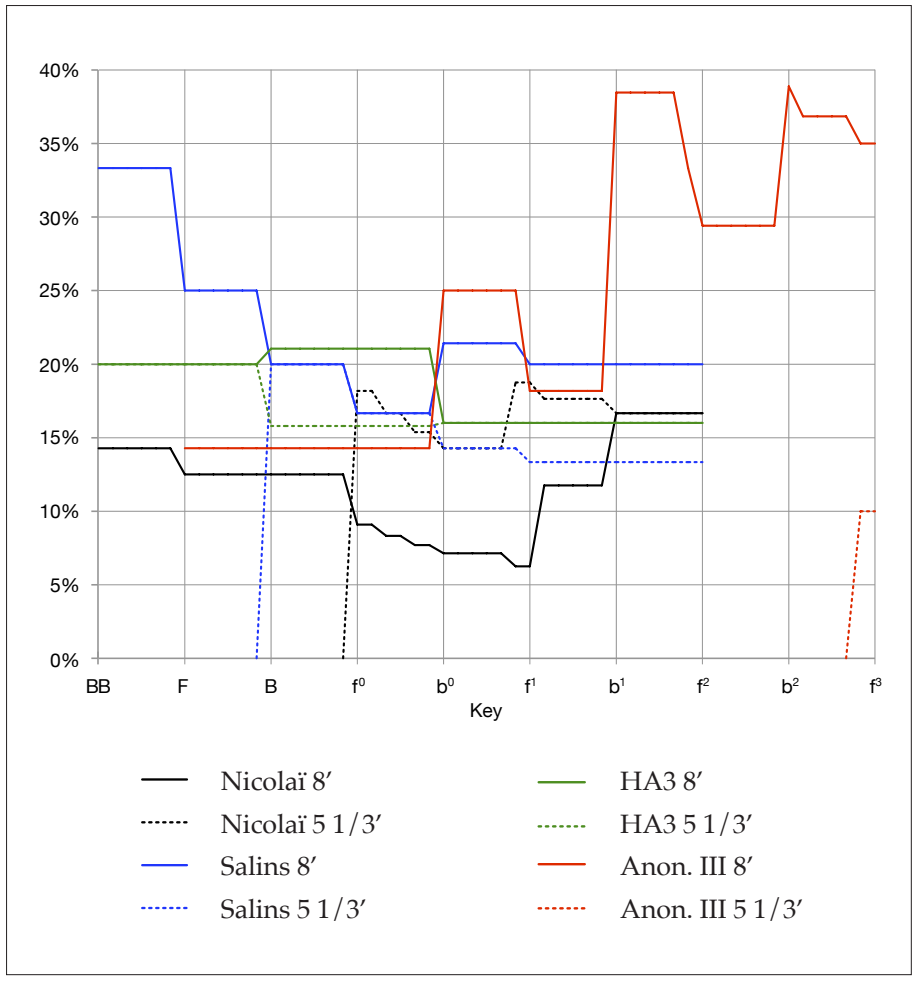
- Although it contained more ranks than the Blokwerk of the Nicolaï organ, the Blokwerk of the organ described in ca. 1450 as "old" in Dijon, features no 5 1/3′ rank at all. The gigantic organ in Halberstadt too, according to the description by Praetorius, had no fifth of the unison rank, at least on f#0.
- In the case of the more modern organ described by Anon. III, the 2 2/3′ is introduced only on e2. The 5 1/3′ appears only on the highest two notes (e3 and f3).
- Whilst, viewed separately, low fifths (5 1/3′) from f0 are conceivable, no single other example is known in which these are more numerous than the unison rank (see graph 1), and certainly not to the extent to which this is the case on e1 and f1.
- Equally, no example is known in which the fifths are in the majority for a lion's share of the compass (see graph 2). Even in HA3 and Salins, the octave ranks never form less than 58%, and in the treble ca 2/3, of the total. In Alkmaar, one has to take into consideration that relatively strong represented fifth ranks are exclusively 2 2/3′ and 1 1/3′ ranks.
- Likewise highly unlikely on the basis of other known Blokwerk compositions is the fact that these 5 1/3′ ranks, in the higher part of the compass, are as well represented as the higher ranks at the same point. All written evidence suggests that higher ranks would outnumber the 5 1/3′ ranks from f0.
- More generally, Blokwerk compositions in which all pitches are equally represented in the treble are unknown. Such a composition is entirely atypical for what we know of mixtures before 1600.

It is true that at some places unlikely wide pipes fit in the preserved rackboard. However, if this fact has to be interpreted without any reservations as evidence for the present composition, it remains highly dubious:

- The same rackboard (with no evidence of a new veneer with possible smaller holes) also served in the 1547 incarnation of the organ. From then onwards, the low fifths would have formed part of a 16′ plenum from d1 as 10 2/3′ ranks. This runs entirely contrary to the spirit of

Graph 1

Percentage of 8′ and 5 1/3′ ranks in Blokwerks

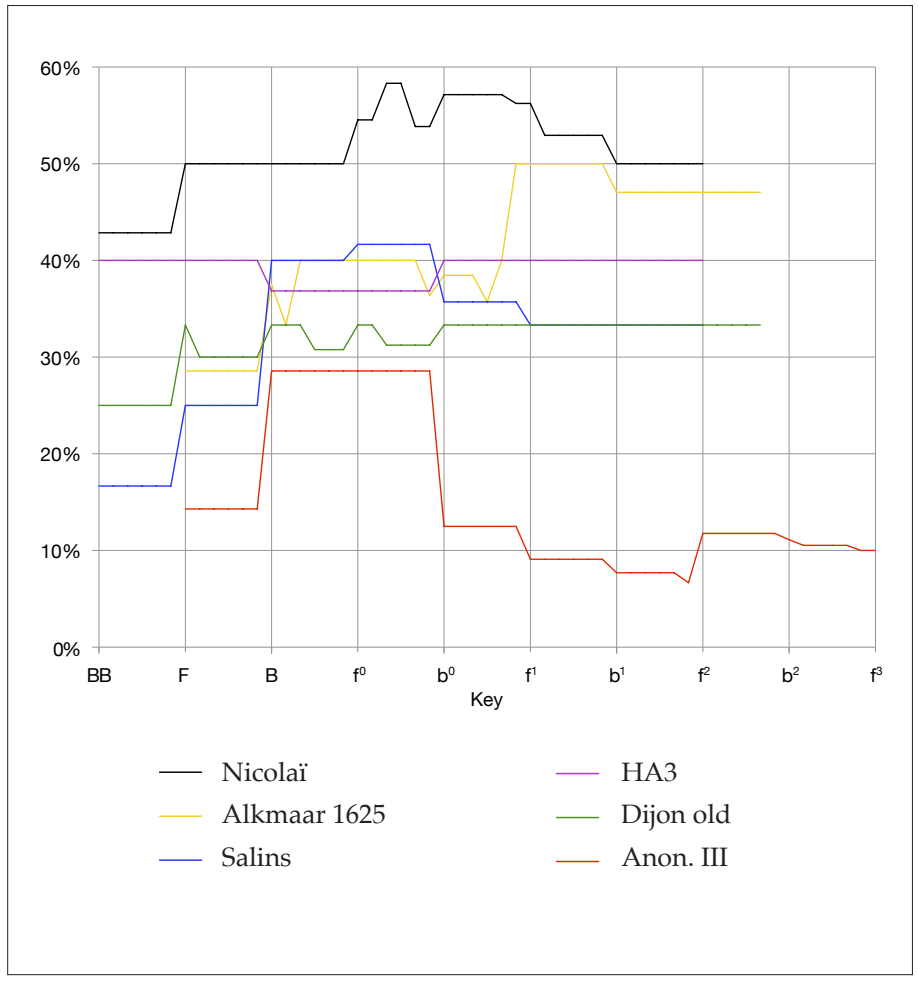


renaissance organs. At the time, commentators clearly and explicitly expressed their aversion to "grobe Quinten". Schlick[29] believed that such fifths made the plenum sound "rüch und grob / gut schweynisch" ("rough and gross, definitely porcine") and described in detail the

29 Arnold Schlick, *Spiegel der Orgelmacher und Organisten* (Mainz, 1511; facs. Buren, 1980), f. 12v-13r.

Graph 2

Percentage of fifth ranks in Blokwerks



resulting dissonant effects that seem to have contributed to the remark "Chords sound almost too modern" in a review of the study copy by Cees van der Poel and Sietze de Vries in *Het Orgel*.[30]

30 Auke H. Vlagsma. "De kopie van het Peter Gerritsz-orgel in het Orgelpark." *Het Orgel 109*/2 (2013), 25. Original quote: "Akkoorden klinken bijna te modern".

- We know that Cornelis Gerritsz' aesthetic was the same as that of Schlick: the 8′ Rugwerk plenum includes a single 2 2/3′ rank only from c2 (from the perspective of the unison rank, already an octave higher than the assumed 10 2/3′ in the Blokwerk!). Schlick too is no great lover of twelfths: "[...] das [= causing dissonants] thůnt nit allein die negsten quinten […] sonder auch die andern ein octaff höher ein duodecima / wiewol nit so vil oder hart als die negsten / sein sie doch zü meyden wie klein die sein / so man sie hört […]" ("not only the lowest fifth […] but also the next an octave higher, the twelfth [cause dissonances], though not as noticable or as harsh as the lower. These should still be avoided, small as they are, because one hears them […]").[31] Apparently fifths should only be deployed if they were high enough not to be perceived as such.
- In the case of the Blokwerk of the significantly larger organ at Utrecht Dom, the first 5 1/3′ rank, at least latterly, began on g1, a fourth higher than the 10 2/3′ in the study copy.[32]
- As 10 2/3′ fifths obscure the ensemble to a significant degree in the renaissance music known to us, they would have rendered the Blokwerk unusable for such music. The idea that Cornelis Gerritsz would have accepted such a situation given his conviction as a representative of the new direction in organbuilding is difficult to imagine. Equally, it seems unlikely that he would have left such a marked contrast between the Blokwerk plenum and that of the Rugwerk.
- It is likewise not very plausible that Cornelis Gerritsz would have removed the fifths and then only sealed off the holes in the toeboard with leather. In other places (among others, the tone channels either side of the central tower), he plugged toeboard holes which were no longer needed.

One should therefore ask the question: might this situation possibly date from a later period? In this area of the Blokwerk chest, the pipes stood in so much free space that this cannot be ruled out. Since the Blokwerk at the time

31 Cf. note 29.

32 Cf. Note 2. Here 680-682.

of Heerman (1688) apparently still consisted of up to 12 ranks, he could be responsible for the supposed alterations, although the amateur Van Montfoort, who worked on the instrument in 1686, seems more likely. This would explain why Heerman condemned the Blokwerk as unusable just two years later and changed its composition.[33]

Unfortunately, these are also classic examples of ad hoc hypotheses. Yet they appear more plausible than the hypothesis that Cornelis Gerritsz would have preserved a plenum including a 10 2/3′ rank. This would seem to be more in keeping with the extremely loud accompaniment of the coarse Dutch congregational singing of the 17th century[34] than for the performance of renaissance polyphony.

If it is methodologically right to take actual rackboard holes and existing pipes that fit into them without any reservations as an indication of an original situation, this still seems to me to be highly questionable. If a surviving situation leads to results which stand contrary to evidence from other sources, that very fact should stimulate a critical analysis of the point of departure. This seems to have included the following:

- All ranks of the original Blokwerk had the same scales.
- The surviving rackboard is the unaltered original one from the 1479 organ.
- The foot lengths and the width of the foot tips of the few preserved pipes are representative for those which have disappeared.

If the last of these three hypotheses seems reasonable, the first, and especially the second are much less so.

33 One would have to assume that he only removed the disruptive low fifths but did not replace them, otherwise the complete absence of a veneer on the present rackboard would be difficult to explain.

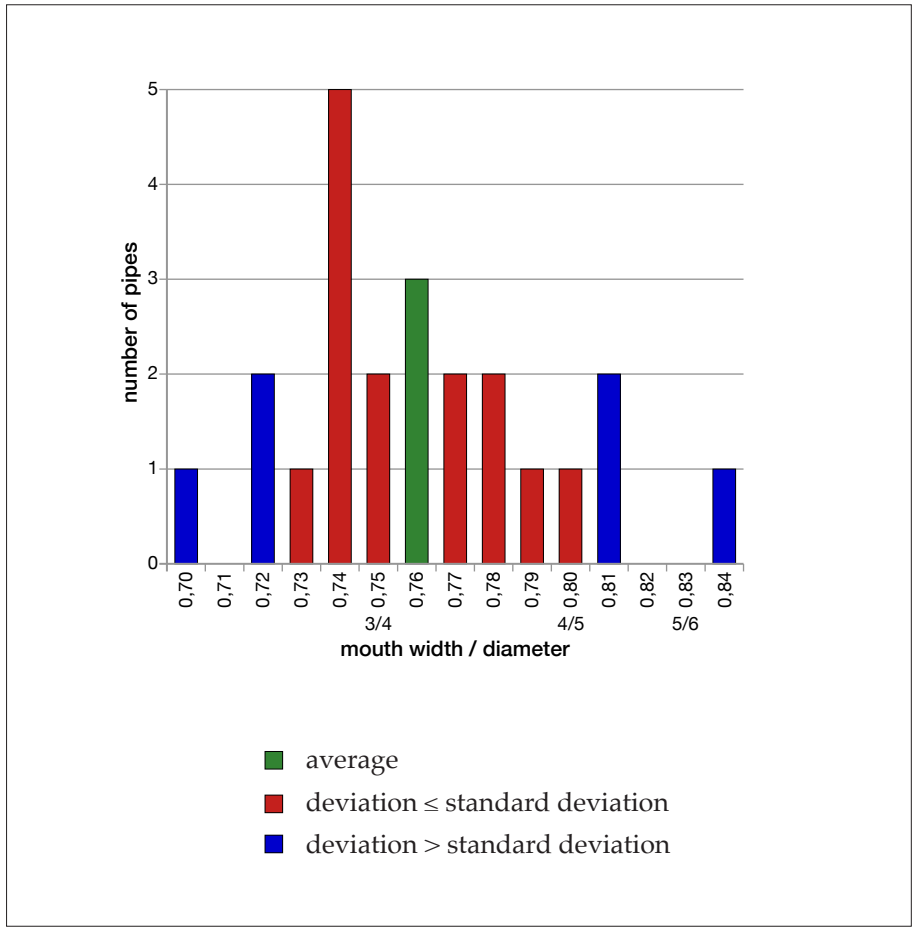
34 I played (improvised) settings in this style on the study copy and they worked surprisingly well. This was not the case for the works from the *Buxheimer Orgelbuch*, in which the low fifths disrupted the polyphony and in some places caused unpleasant dissonant effects. The only pieces to survive were the (in this context) less critical "fundamenta". However, around 1479, these can no longer be considered to be contemporary music.

Mouth widths of interior pipes

Diepenhorst states that three different (relative) mouth widths can be identified in the interior Blokwerk pipes. However, if we look at the mouth widths of the circa 23 old pipes with accurately measurable mouths in graph 3, we see a relatively equal distribution without distinguishable peaks around 3/4, 4/5 and 5/6 of the pipe diameter. Both of the first two values fall within an area with a relatively continuous scatter. The third value, however, falls outside this area; only one pipe has approximately this mouth width. Statistically, therefore, there is no evidence for the stated

Graph 3

Distribution of the mouth widths of the interior pipes of the Blokwerk



differentiation. Given the relatively small number of pipes, this is a normal situation for somewhat sloppily made pipes in which the mouth widths may possibly have been intended to be 3/4 of the diameter in all cases.

Meantone tuning

Although there are indications of the use of third-based temperaments from the end of the 15th century onwards, this means in no way that a pure meantone temperament is plausible for an organ from 1479.

If we limit ourselves to authentic sources, one discovers indeed that the first indications of a third-based tuning system on an organ stem from around the construction year of the Nicolaï organ. The most convincing and most relevant source is a contract with "Maestro Domenico di Maestro Lorenzo" for a new organ in the church of S. Martino in Lucca with sub-semitones for d# /e-flat and g# /a-flat.[35] This does not necessarily indicate meantone tuning, however. The sharp thirds described explicitly by Schlick apparently stemmed from the wish to maintain relatively good fifths rather than the possibilities for enharmonic modulation. Sub-semitones did not automatically signify that the thirds were, in general, completely pure.[36]

Whilst new developments were undoubtedly afoot, one cannot easily ignore their chronological and, especially, geographical distance from the Nicolaï organ. Therefore, it is questionable whether in Utrecht in 1479 anyone would have considered tuning in anything other than Pythagorean (perhaps the variant with the "wolf" located between B and F#). Is it just coincidence that no Northern source before Schlick (1511) gives any indication of a third-oriented temperament? The first source for pure meantone tuning dates from 1571 (Zarlino, *Dimostrationi harmoniche*) and the earliest indication

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35 F. J. Ratte. *Die Temperatur der Clavierinstrumente.* Kassel 1991. 181 en 359.

36 In the case of real accidentals such as c#, g# and d#, which almost never appear as fifths, and as fourths only in passing (as a double leading note in a clausula) one can imagine that these would have been tuned as pure thirds. The same is true of the note a-flat, used primarily as fa super la and described in this contract as a (minor) third above f. This is less evident with f# and e-flat which may also have had to function as a fifth transposition of B and as a fourth transposition of B-flat respectively.

north of the Alps is found in an undated letter from Abraham Verheyen to Simon Stevin from the early 17th century.[37] This is almost 130 years after the construction of the Nicolaï organ. Even for Cornelis Gerritsz in 1547, this tuning is, therefore, not yet current. It seems to me then that the most probable tuning for the Nicolaï organ in 1479 is the Pythagorean system with the "wolf" between B and F#.

The study copy as an instrument for the appropriate repertoire

As we have already seen, the study copy departs in significant aspects from what we know from contemporary sources and also partially from what we can ascertain from the original. In this light, the sentence "Improvisation seems the most appropriate manner to test out the possibilities" in the already mentioned review in *Het Orgel* [38] is revealing. Whilst improvising, the player can adapt to all the idiosyncrasies of the instrument; this tests the player rather than the instrument. When one plays from contemporary scores on the other hand, the instrument is also obliged to demonstrate its appropriateness for that music. Those pieces which prove troublesome teach us the most in the context of a potential future study copy.

In order to answer the question as to what constitutes appropriate organ literature, we must confront the fact that from the period around 1479 no organ music from the Low Countries has survived. If we spread the geographical net somewhat wider, the music of the type found in the *Buxheimer Orgelbuch*, at least in terms of date, comes closest. The few characteristics we can observe in the pieces found in this collection[39] do not in any case seem to indicate a more modern organ than that of Peter Gerritsz.

37 The Hague, National Library of the Netherlands, KA XLVII.

38 Cf. Note 30. Original quote: "Improvisatie lijkt de meest geschikte manier om de mogelijkheden af te tasten."

39 The only characteristics of the organ type suggested by the music are the manual compass, the fact that the pedal sounded an octave lower than the (lowest sounding) manual and that the pedal did not require a compass larger than an octave.

When we assess the appropriateness of the study copy for this repertoire, the first thing which strikes us are the problems caused by the incomplete compass of the Cymbel. When engaged as the sole addition to the Doof,[40] the stop is unusable as its compass is shorter. For strengthening a decorated treble line, on the other hand, its compass is too large with the result that improvisation (in a manner different to the preserved music of the period) presents the only remaining option for performance.

[§xxx] What is also clear is that the meantone tuning works against the literature of the period, in which fifths still play an important role. This is of course a subjective impression,[41] but in accordance with the mentioned historic facts. It is my subjective impression too that the polyphonic pieces are disturbed by the low fifths in the Blokwerk. These result in frequent, almost dissonant effects, which are difficult to imagine as being the part of the intended effect of the music. When one hears such growling fifths in this repertoire, it is easy to sympathize with Schlick's aversion to them, and one must ask oneself whether this aversion could really have appeared from nowhere in the early 16th century. In fact one rather inclines to a subjective confirmation of a trend already noticeable in the treatise of Henri Arnaut de Zwolle: to leave out the fifth above the unison rank.

As far as the compass of the Bovenwerk Doof is concerned, the repertoire suggests that the extension of its compass to include the bass notes F-B-flat is unnecessary.

To summarize, one can observe that the very low composition of the Blokwerk, the use of the Cymbel and the meantone tuning are problematic. These are aspects which are also doubtful when seen in the context of other evidence. The equally doubtful notes F-B-flat in the bass of the Doof also serve no purpose.

40 That this sort of registration was popular, is evident not just from various 16th century registration indications but also from the fact that the written sources suggest that the Cymbel stop was always disposed across the entire compass.

41 Albeit one garnered from long and repetitive experimentation and therefore hardly attributable to mental conditioning, if at all.

Table 2

Space between the frontpipes of the Bovenwerk (compass: B, c0, d0 - f2)

C-side				C♯-side			
key	outer Ø			key	outer Ø		
	(1)	(2)	(3)		(1)	(2)	(3)
B	48,8	48,8	48,8	c^0	47,2	47,2	46,8
d^0	44,2	44,2	43,1	$d♯^0$	42,8	42,8	41,4
e^0	41,5	41,5	39,8	f^0	40,2	40,2	38,2
$f♯^0$	39,1	39,1	36,8	g^0	38,0	38,0	35,5
$g♯^0$	36,9	36,9	34,2	a^0	36,0	36,0	33,0
$b♭^0$	35,0	35,0	31,8	b^0	34,2	34,2	30,8
c^1	33,3	33,3	29,8	$c♯^1$	32,6	32,6	28,8
d^1	31,8	31,8	27,9	$d♯^1$	31,1	31,1	27,0
e^1	30,5	30,5	26,2	f^1	29,9	29,9	25,5
$f♯^1$	29,3	28,6	24,8	g^1	28,7	27,4	24,0
$g♯^1$	28,2	26,3	23,4	a^1	27,7	25,2	22,7
$b♭^1$	27,3	24,2	22,2	b^1	26,8	23,3	21,6
c^2	26,4	22,4	21,1	$c♯^2$	26,0	21,6	20,7
d^2	25,6	20,8	20,2	$d♯^2$	25,3	20,0	19,8
e^2	24,9	19,3	19,4	f^2	24,7	18,7	19,0
sum	503	483	449	sum	491	468	430

	C-side			C♯-side		
	(1)	(2)	(3)	(1)	(2)	(3)
Space between the imposts:	539	539	539	528	528	528
Sum of the outer pipe diameters:	503	483	449	491	468	435
Remaining space (S):	36	56	90	37	60	93
Average space between 2 pipes (=S/16):	2,3	3,5	5,6	2,3	3,7	5,8
Average space in lower flats (HW)	5,0			5,8		

(1) Scales Bovenwerk = scales Hoofdwerk, no break at Bovenwerk f^1
(2) Scales Bovenwerk B-f^1 = scales Hoofdwerk; Bovenwerk $f^2/f^1 = 5/8$
(3) Scale Bovenwerk B = scale Hoofdwerk b^0; Bovenwerk $b^0/B = 5/8$

Topic of further research: the scales of the Bovenwerk façade pipes

Neither pipes nor toeboards with circles are preserved in the Nicolaï organ's Bovenwerk. As a result, any reconstruction of the scales of its façade pipes becomes unavoidably an object of speculation.[42] The only thing which can be said with some certainty is that they deviated enough from Cornelis Gerritsz' standard practice that even a partial re-use of the pipes in 1547 must have been out of the question. The notion that this replacement may have been the result of corrosion or tin pest is unlikely given that a large proportion of the comparable pipes from the lower flats has been preserved to the present day. In addition, it is plausible that the pipes of the entire Bovenwerk compass would have fit into the façade. It is true that the width of the flats in this slightly asymmetrical case seems, in principle, to have been determined by the space required for the Hoofdwerk's façade pipes, but even in the case of the widest imaginable scaling of the Bovenwerk pipes,[43] a small adjustment of the organ case is sufficient to accommodate it to those pipes as well. If we assume a Bovenwerk compass of B,c0,d0-f2, pipes with these scales fit into the existing flats, albeit with extremely little space between them (see table 2).
This prompts the question as to whether the façade pipes of Hoofdwerk and Bovenwerk did in fact have identical scalings. The few preserved organs from the Holland[44] tradition which still contain façade pipes from one builder in more than one division display no differentiation in this respect.[45] The instruments in question are as follows (in order of relevance):

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42 In the case of the study copy, this problem is not of significance because the Doof of the Bovenwerk is executed as a doubling of the unison rank of the Blokwerk. The upper intermediate flats are, as a result, simply copies of the lower ones.

43 In this case the scalings of the Hoofdwerk façade pipes, extrapolated to f3, which, in the case of the highest notes, produce Woudfluit-like scalings.

44 The Holland tradition here means "Dutch with the exception of the provinces Groningen and Friesland".

45 The same is true, incidentally, for the interior pipes for which, as with the façade pipes, no indication exists concerning differentiation of scalings between different divisions.

- Utrecht, Jacobikerk (Gerrit Petersz, 1504-1509), façade pipes of Hoofdwerk and Bovenwerk.[46]
- Utrecht, Nicolaïkerk (Cornelis Gerritsz, 1547), façade pipes of Rugwerk and Bovenwerk.
- Lüneburg, St. Johanniskirche (Hendrik Niehoff, 1551-1553), façade pipes of all divisions.

The organ in the Jacobikerk in Utrecht seems especially relevant in this context. Gerrit Petersz was an extremely conservative organ builder and it is therefore not implausible that his work in this aspect was not considerably different to that of his father Peter Gerritsz.
This attractive notion is not, however, entirely free from complicating factors. In the first instance, the question surrounding the scaling of the highest octave is not easy to answer. In contrast to all the above mentioned, later instruments (including that of the Jacobikerk in Utrecht) the known portion of the scaling progression proceeds without a single break. When we continue this line in the same way, the highest octave of the Bovenwerk Doof exhibits an extremely slow halving ratio. The result for the pipe sounding f3 is a woudfluit scaling as one would find in the Schnitger tradition (see graph 4). This results not only in improbably small gaps (see table 2) between the façade pipes but also in much wider scalings than are known from any other preserved Gothic pipwork.[47] Therefore, the very principal of an equal scaling curve for all the façade pipes would imply a sharp break at the pitch f2.[48]

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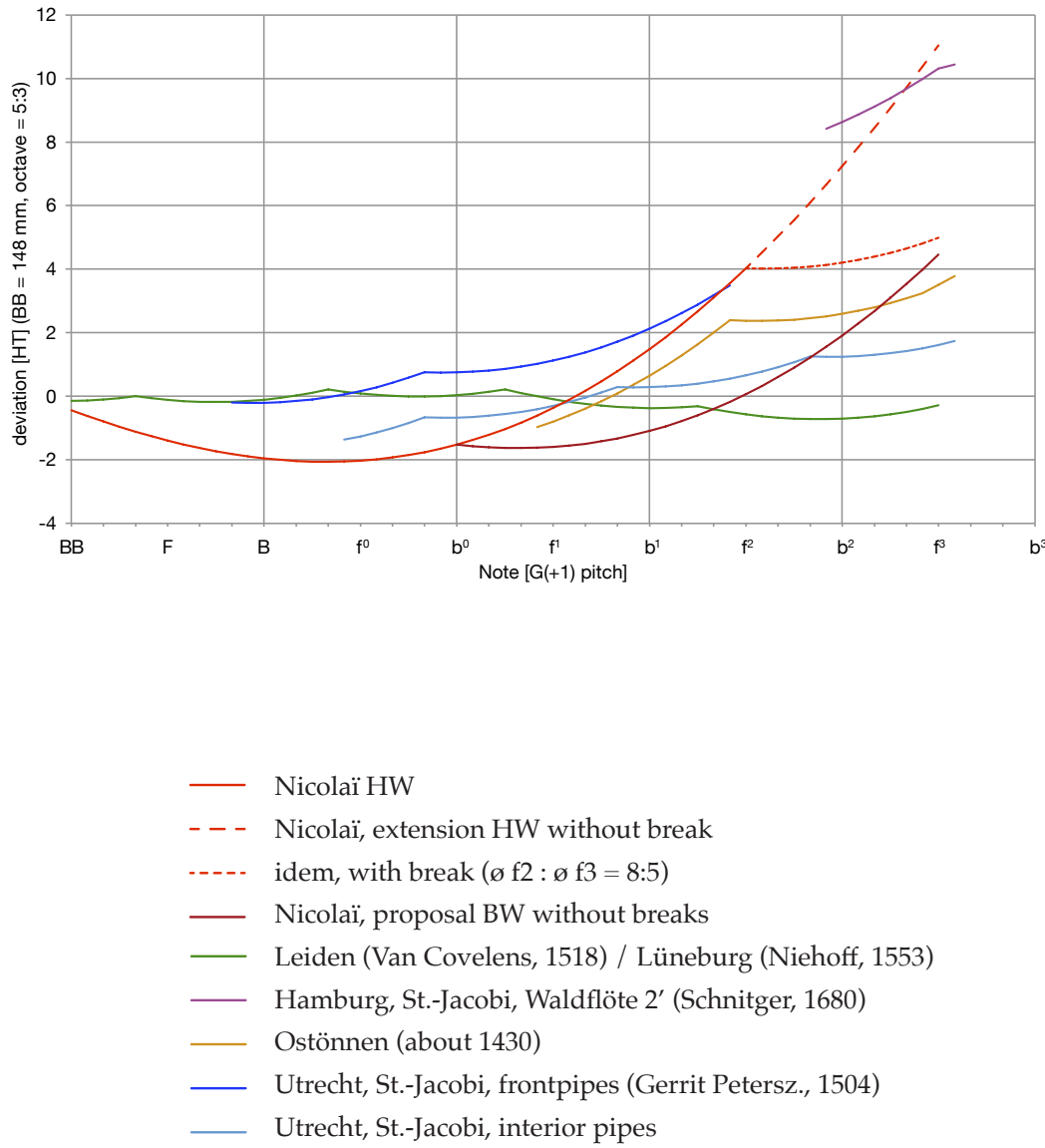
46 For the reconstructed c and f scalings of these pipes, cf. note 2 (here 127-128); for a complete survey of the functions of the original façade pipes, idem (693-702).

47 The widest Gothic pipes known to me are those at Ostönnen (Germany). The scalings illustrated in graph 4 are based on the pitch following the hypothetical removal of the 19th century extensions of the pipes and form, as a result, an upper limit. The pipes could, theoretically, once have been longer and, as a result, proportionally narrower.

48 I.e. the smallest pipe of which the scale is known. In graph 4 I have chosen a 5/8 ratio as this is known from the Jacobikerk organ in Utrecht. Such a choice remains, of course, speculative. It presents the slowest progression which allows more or less acceptable gaps between the façade pipes (see table 2).

Graph 4

Comparative diagram of principal scales



Even then, the gaps between the pipes remain very small.
Two possibilities remain. Either the Doof was not entirely present in the façade or the scalings were different from those of the Hoofdwerk in the lower octaves as well. The first possibility seems to me to be rather implausible. In order to create sufficient space, one would have been obliged to make the space between the imposts of the intermediate flats only 15-20 mm broader. This would still have resulted in very acceptable gaps between the actually relatively tightly packed façade pipes of the Hoofdwerk. In any case, theoretically "correct" proportions are entirely absent because of the asymmetrical layout. A slightly larger deviation from the imaginary ideal would barely have been noticed. It seems to me therefore that a scaling pattern which deviated from that of the Hoofdwerk was the most probable scenario. On this point a reconstruction must necessarily resort to speculation. However, in the process of conjecture applying the following conditions seems to me to be reasonable:

1. All pipes of the Doof must be located in the façade.
2. The gaps between the Doof pipes must be comparable with those between the pipes in the intermediate flats of the Hoofdwerk.
3. The scalings must not deviate more than necessary from those of the Hoofdwerk.
4. The scaling of the lowest pipe must exhibit a simple relationship with the equivalent pipe (b0) in the Hoofdwerk.
5. The scale of the smallest pipe must not be significantly wider than known from other preserved Gothic organs (Ostönnen).
6. It seems plausible to repeat the principle of a progression without breaks in the Bovenwerk.

A proposal that satisfies these conditions can be seen in graph 2 and table 2. It is based on the principle that B in the Bovenwerk is identical to b0 of the Hoofdwerk and that the addition constant is equal to 1/4 of the sheet width (≈ circumference) of this pipe.[49]

49 This is double that of the lowest part of the Hoofdwerk Prestant. A plausible alternative could be to keep the mouth width ratio from B to b0 the same as that of the equivalent notes on the Hoofdwerk. This results in a somewhat narrower scaling (better at the top of the compass but very narrow in the lowest octave).

Topics for further research: Was the Bovenwerk compass extended in 1508?

As we have already seen, hole 32 in the Blokwerk wind-chest is problematic. It fails to correspond with any marked line on the Bovenwerk rollerboard and seems, put simply, to be surplus to requirements. Partly as a result of the fact that it fails to follow the zig-zag pattern described by the rest of the holes, Diepenhorst assumed in 2009 that it had been added later.[50] According to this theory, in 1508 the original G tuning would have been altered to a C tuning by replacing the keyboards. Without changing the compass of the windchests, the Bovenwerk compass would have become f0-b2 (31 notes). In order to recreate a logical compass, a 32nd note, namely c3, would have been added.
Diepenhorst's interpretation of the indications presented as evidence of an alteration to a C-organ, also seems to me to be conceivable. That, as a result, the compass of the Bovenwerk was expanded in the manner suggested by him appears to me to be improbable, for the following reasons:

- I do not see why hole 32 (located on the centre line of the zig-zag pattern rather than on one of the outer rows) should indicate a later addition. The simplest, and therefore also the most likely, explanation for this kind of zig-zag pattern is the desire to keep as much wood between the holes as possible. This played no role for hole 32, which stands on its own. Locating it on the centre line is as logical, therefore, as locating it on one of the outer rows.[51] Therefore the only supposed indication for the addition of one note is in fact non-conclusive.
- Notes higher than a2 were not included in new organs built in Holland, Utrecht and Brabant until far into the 16th century. Why then would

50 Cf. Note 21. Here 246.

51 The deviant hole 0, obviously not related to the key action, does not lie precisely on one of the outer rows but somewhat closer to the front.

one go to the trouble, when rebuilding the organ, of adding a c3 simply to achieve an elegant compass? Surely it was much easier and cheaper simply to disconnect the 'useless' b-flat2 and b2. Why would Gerrit Petersz be more concerned in 1508 with terminating the treble of all manual keyboards on the same note, than his son Cornelis would be in 1547?[52]

- The assumption that the compass B-f2 (31 notes) was enlarged to f0-c3 (32 notes) by adding a new tone channel for the highest note, implies the following alterations:

channel no.[53]	*old 4′*	*new 8′*	
1	B	f0	(new pipes)
2	c0	f#0	(pipes from previous B)
3	c#0	g0	(pipes from previous c0)
(etc.)			
30	e2	b-flat2	(pipes from previous d#2)
31 (c-side, next to 30!)	f2	b2	(pipes from previous e2)
32 (added where?)	–	c3	(pipes from previous f2)

52 A treble compass terminating on c3 for the Blokwerk is indeed exceptional but it is only because of the simple presence of the corresponding pipes and tone channels that this was the case. This is something fundamentally different from a pointless possible extension of the Bovenwerk compass in 1508.

53 Thinking chromatically: first key = 1, the last 31 (not the order on the wind-chest)

This implies shifting all pipes. In the case of the Cymbel, this would be relatively straightforward, as the diameter of the holes in the pipe rack would in any case have been determined by the diameter of the feet tips of these small pipes. In the case of the Positie many pipes already would have to be fitted in again and, in places where the number of ranks increases, one or more holes would have been sealed off. However, really unpleasant are the following aspects:

The façade pipes
Because the locations of the original tone channels were determined by the, unchanged, roller-board, shifting the Doof would require the C and C# sides to be reversed, with the exception of the old e2/new b2, which, in principle, would have to be moved just one place. Whether there is space in the façade for such an operation, is doubtful. The simplest solution, probably, would be to lengthen each of the façade pipes by a semitone and, if necessary, to slightly shorten the feet.

The tone channel for the added c3
The largest problem is undoubtedly presented by the space available for the added tone channel for c3. Either this had to be carved out between some of the largest tone channels[54] or be located in added blocks of wood. Both solutions bring with them an absurd amount of extra work for a note which is in fact unnecessary. The first solution, which is the more realistic of the two, brings with it the risk of runnings in the event of cracks in the block or in the event that the block became detached from the table.

If one, despite all the extra work, really did want a chromatic compass from f0–c3 it would have been much easier to locate the new f0 on an added block with one or two conveyed-off interior pipes for the Doof. This would have meant leaving everything both on the existing chest and in the façade

54 The easiest position would be between tone channels 3 and 5. In this instance, no extra roller would be required.

precisely as it was. However, this solution is not consistent with the surviving traces. When considered together with the reasonable assumption that this useless extra key would have been much more trouble than it was worth, the only conclusion one can come to is that such an extension of the compass simply did not occur. If the pitch really was changed to a C-pitch, one of the following methods of achieving this seem to me to be much more likely:

key, former 4'	*key, new 8'*	
B	f0	(pipes lengthened by a semitone)
c0	g0	(pipes unaltered) [c#0 g#0] (if present)
d0	a0	(pipes unaltered)
~		
f2	c3	(pipes unaltered)

advantage: simple, technically elegant
disadvantage: no f#0 and probably no g#0

In the case that c#0 was present (which I find less likely), the absence solely of f#0 was probably not too much of a problem. If there was no c#0 present, the following alternative adaptations would be conceivable:

channel no.	*key, 4'*	*key, 8'*	*Positie/Cymbel*	*Doof*
1	B	f0	new	former B*
2	c0	f#0	former B	former c0*
3	d0	g0	former c0	new interior pipes
4	d#0	g#0	new	new interior pipes
5	e0	a0	former d0	former d0
~				
30	e2	a2	former d2	former d2
31	f2	(unused)		

* *Lengthened by 1 semitone*

advantage: chromatic compass
disadvantage: time-consuming, technically not very elegant

In this case, much work would be required to accommodate the shifted pipes and to adapt the conductors to the façade pipes, but the chests and the façade pipes themselves from d0 could remain unaltered.

Abstract

The Van Straten Organ at the Orgelpark documents an interpretation of the original state of the organ Peter Gerritsz built in 1479 in the Nicolaï church in Utrecht. The Van Straten Organ was built in 2012 by Orgelmakerij Reil, in the Orgelpark, based on research conducted by Wim Diepenhorst, as a "study copy". Several aspects of the organ indeed raise questions. The main one is that the transmission tone channels in the Blokwerk chest seem to have been part of the pedal compass; and did not, as the study copy suggests, function as part of a manual transmission. This would render pedal pipes at the outside of the case, as the study copy has, redundant, as well; the actual traces of the pedal keyboard in the lower case can be attributed to Cornelis Gerritsz. Furthermore, the Doof might very well have been a 4' stop; as such, it could stand in the façade, fitting perfectly if assuming the compass to have no c#0. Other points of discussion are the 5 1/3' rank of the Blokwerk of the study copy (it could be argued that there is reason not to include it); the mouth widths of the interior pipes (they seem to have been intended to be 3/4 of the pipes' diameters); the meantone temperament of the study copy (the original organ might have had a Pythagorean tuning instead); and the scales of the Bovenwerk Doof (which might have been narrower than the related Blokwerk rank). That these factors might be taken into consideration is supported by musical sources such as the *Buxheimer Orgelbuch*. Interestingly, the organ inspires questioning the later history of the organ as well. For example: was

the Bovenwerk compass extended in 1508? Evidence provided by the original instrument itself suggests that it was not.

Koos van de Linde

Koos van de Linde studied musicology at Utrecht University and organ at the Utrecht Conservatory. He participated for more than ten years in a research project led by Jan van Biezen to document preserved elements of Dutch Renaissance organs. Van de Linde has continued to investigate the scaling, voicing and technical construction of Dutch organs from the period before 1700 and the influences of Hendrik Niehoff on the Hamburg organ building tradition. Koos van de Linde has taught organ building and history of organ music at the Antwerp Conservatory and at the Lemmens Institution at Louvain, and has served as an expert consultant in restoration and reconstruction projects for instruments such as the Van Hagerbeer organ in the Pieterskerk in Leiden, the choir organ in the Laurenskerk in Alkmaar, the organ in Ostönnen and the spring chest organ at Lemgo. He currently is a researcher at the Arp-Schnitger-Institut für Orgel und Orgelbau at the University of the Arts Bremen in Germany, participates in the Schnitger Database project, and works as an independent organ researcher and consultant.

XI

Jaap Jan Steensma - The Obscure Eighteenth-Century Roots of the Word "Blokwerk"

"Where in our Fatherland has one seen a work, in which everything had to sound simultaneously without the stopping of Registers, like [they] were in those [other] countries?…"[1] Whoever looks for the word "Blokwerk" in Havingha's *Origin and Evolution of the Organ* (Alkmaar, 1727) - the first written historical account of the organ in the Netherlands - will find it remarkably absent. As a matter of fact, Havingha even confidently denies Dutch equivalents of medieval "Mixture-only" organs as he knew them through Praetorius' *Syntagma Musicum*, Vol. II: "…No one, I believe, will be able to show me that; but [they] will all have to allow this said."[2]
This practical unfamiliarity with (the concept of) the Blokwerk is all the more remarkable when realising that these lines were written only five years before the word "Blokwerk" was first documented in an organ-related context. This paper explores the obscurity of the Blokwerk from the time people started calling it "Blokwerk" and onward. Some of the observations have been previously published by others.[3]

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1 G. Havingha, *Oorspronk en Voortgang der Orgelen* (Alkmaar 1727, ed. by A.J. Gierveld, Buren 1985), facsimile p. 91. Original text: "Waar heeft men in ons *Vaderland* een werk gesien, daar alles te gelijk zonder afsluitingen van Registers heeft moeten klinken, gelyk in die genoemde plaatzen waren?"

2 Cf. Note 1. Original text: "Geen een vermeen ik zal my dat konnen toonen; maar zullen dit gesegde alle moeten billyken."

3 For example M.A. Vente. *Utrechtse Orgelhistorische verkenningen.* Utrecht: VNM, 1989, 41-42.

Current understanding

Current literature on the history of the organ places the Blokwerk as a defining feature of the larger "mediaeval" organ found throughout Europe. Its Utrecht roots are mentioned in the German *Lexikon der Orgel*: "The term Blockwerk [sic] goes back to Dutch sources of the 18th century and was introduced mid-20th century by Maarten Albert Vente as a designation of a chest with several ranks of pipes, but without stop valves. The Blockwerk resembles a great Mixture: several pipes stand above a tone valve without intermediary stop mechanics. When a key is pressed, all the pipes of the concordant tone will sound simultaneously."[4]

History

The word "Blokwerk" already existed before it was applied to the organ.[5] In its most common use, it referred to the complete system ["werk"] of blocks and tackles (ropes and pulleys) on a sailing ship. Other possible meanings of Blokwerk would have to do with buildings that "blocked" people in some way or another, though more obvious synonyms were at hand. It could, for example, refer to a "Bulwark" for military purposes (blocking the enemy's supply lines; blocking the enemy from entering the city, etc.), or to a "Blockhouse", a prison in which people were laid in blocks to prevent them from escaping.[6]

In fact, the present-day meaning of a block, or "blocking" (either in modern German, English and French), seems to have been largely applicable in the seventeenth and eighteenth centuries: a solid, immovable piece of material (usually wood or stone), used for multiple purposes. "Hol-blocks" were wooden shoes ("hollow blocks"); a (human) torso might be called a block; while a silly person was a block-head ("Homo stupidus").[7] Even though early recorders were made largely out of one piece, the German "Blockflöte" primarily owes its name to the small piece of solid wood (the fipple plug) in the mouth piece. Finally, as a verb, "blokken" today means "to study hard, or work diligently".

Just as in modern use, the word "werk" in the 18th century could refer to both the organ as a whole, or to one of its divisions. This use is illustrated in the history of the Utrecht Nicolaï organ, where Johan Nicolaas Heerman made a new Manual (= Blokwerk) to Pedal coupler in 1687/8. The new coupler was supposed to give "the 'werck' [=the whole instrument] its perfect size", while the examiner remarked that the "Positive in [the] Nicolai church necessarily ought to be tuned, while the other 'werck' is now well."[8]

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4 Translated after H.J. Busch and M. Geuting (ed.), *Lexikon der Orgel* (Laaber 2007); lemma 'Blockwerk', p. 104. Original text (author Roland Eberlein): "Der Begriff Blockwerk geht zurück auf niederländische Quellen des 18. Jahrhunderts und wurde Mitte des 20. Jahrhunderts von Maarten Albert Vente als Bezeichnung für eine Lade mit mehreren Pfeifenreihen, aber ohne Registerzüge eingeführt. Das Blockwerk ähnelt einer großen Mixtur: Über einem Tonventil stehen mehrere Pfeifen ohne zwischengeschaltete Registerventile. Wird eine Taste bestätigt, erklingen daher immer alle Pfeifen dieses Tones."

5 For these historical meanings, I relied on the search application of *De Geïntegreerde Taal-Bank* (gtb.inl.nl), as well as on digital editions in the Digitale Bibliotheek voor de Nederlandse Letteren; dbnl.org. Further: Nicolaas Witsen. *Architectura navalis et regimen nauticum Ofte Aaloude en hedendaagsche scheeps-bouw en bestier*. Amsterdam, 1690, 102-103. Cornelis Gijsbertsz Zorgdrager. *Bloeijende opkomst der aloude en hedendaagsche Groenlandsche visschery*. Den Haag, 1727/2, 335-336 (DBNL-TEI 1).

6 See e.g. H. Hexham's English-Dutch dictionary; lemmata "block", "block-huys", "block-werck", "bolwerck[en]" in *Het groot woorden-boeck: gestelt in 't Nederduytsch, ende in 't Engelsch.* Rotterdam, 1648 (dig. ed. 2010), 69 and 73. Last consulted in February 2017: page 69 and page 73.

7 See C. Kiliaen, lemma "block" and derivations in *Etymologicum Teutonicae Linguae* . Antwerp, 1599; mod. ed.: Den Haag, 1972, dig. ed. DBNL 2004), 58 and 63. Consulted in February 2017. Examples are found in the *Lievelt Bible* (Antwerp, 1542), 1 Sam. 5:4b; and the *Louvain Bible* (Louvain, 1548): 1 Sam 5:5a..

8 R. van Dijk, "Het Peter Gerritz-orgel van de Nicolaikerk te Utrecht". In H. Verhoef (ed.), *Het oude orgel van de Nicolaïkerk te Utrecht: Kroongetuige van de Nederlandse muziekgeschiedenis.* Zutphen: Walburg Pers, 2009, 11-153. Original text (36): "het werck syn volkommen groote te geven"; "posetief in [de] Nicolai kerk nootsakelijk diende gestelt te sijn, terwijl het andere werck nu wel is."

Blokwerk remnants in Havingha's time

The Utrecht organ tradition held the Blokwerk chest in particular high esteem during the 15th and 16th centuries at least in its three manual organs. Even though most of the original Blokwerk chests had been altered to registrable chests in the 17th century, several of the "original/former" Blokwerk organs from this Utrecht tradition were still preserved when Havingha wrote his account.[9] Some examples included organs by (in chronological order):

Peter Gerritsz (+1481)
Utrecht, St.-Nicolaaskerk 1479
Haarlem, Grote/St.-Bavokerk 1466/71
|
Gerrit Petersz (son of Peter Gerritsz; +1527)
Utrecht, St.-Mariakerk 1484/1518
Utrecht, St.-Jacobskerk 1509
Naarden, St.-Vitus ±1510
|
Cornelis Gerritsz (son of Gerrit Petersz; +1559)
Amersfoort, St.-Joriskerk 1551
|
Peter Jansz de Swart (±1536-1597)
Utrecht, Dom
Utrecht, St.-Maartenskerk 1571

In their preserved documents, these organ makers never used the word "Blokwerk", instead opting for such names as "(great/standing) principael", "naturael" or "werk". "Principael" later on became an equivalent of

9 The given years refer to the year of completion(s) of the organ by the original builder. Cornelis Gerritsz and Peter Jansz de Swart worked on most of the instruments of their predecessors (dates not listed here), but maintained the present Blokwerk choruses.

"plenum", as Pieter Hellendaals' registration instruction from 1731 suggests: "To the 'principaal' sound should be used..."[10]
In Delft, the organ in the Nieuwe Kerk (1633) had three different types of chests ("secreten"), just like the Utrecht Nicolaï organ at the time:

Bovenwerk
"(...) alle springende registers"

Hoofdwerk
" 'T middelste secreet van 't grote principael (...)"

Rugpositief
"(...) Alle slepende registers (...)"[11]

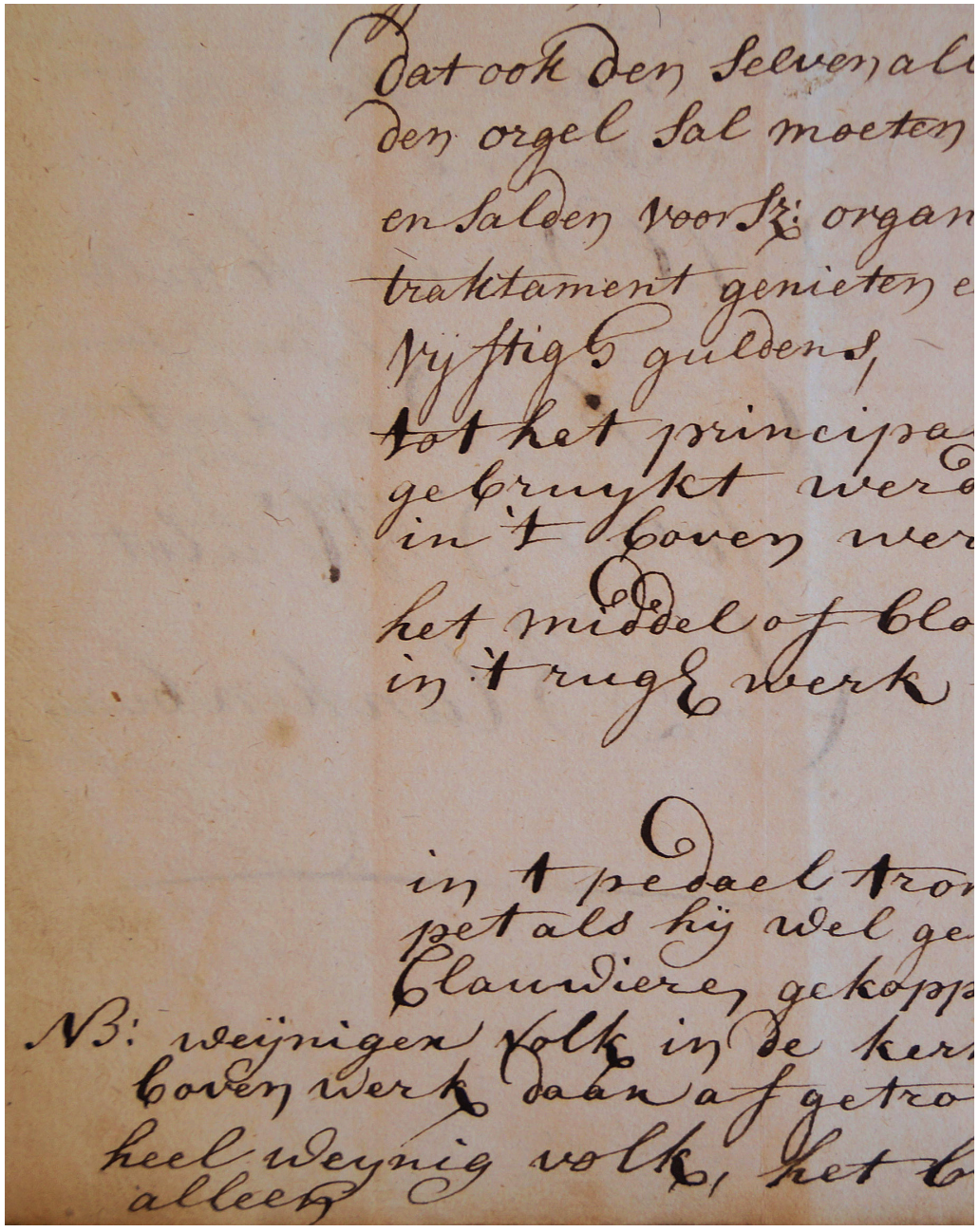
1731/1732: An organist's instruction

The earliest documented use of the word "Blokwerk" in relation to an organ dates from late 1731 or early 1732. On February 2, 1732, the ten year old Pieter Hellendaal (1721-1799) succeeded Paulus van Monsjou (who held the position since 1718) as organist of the Utrecht Nicolaïkerk.
Pieter, who was assisted by his father Johan Hellendaal, received an instruction that was copied in the church warden's resolution book.[12]
Perhaps it was because of Hellendaal's young age that the instruction even prescribes which stops to use for the accompaniment of the singing congregation.
The stop names in this instruction were either written by someone other than the official scribe, or the scribe filled in the names at a (somewhat) later moment. This is suggested by the use of darker ink, as well as by small deviations in the handwriting. Also, the layout of text on the page

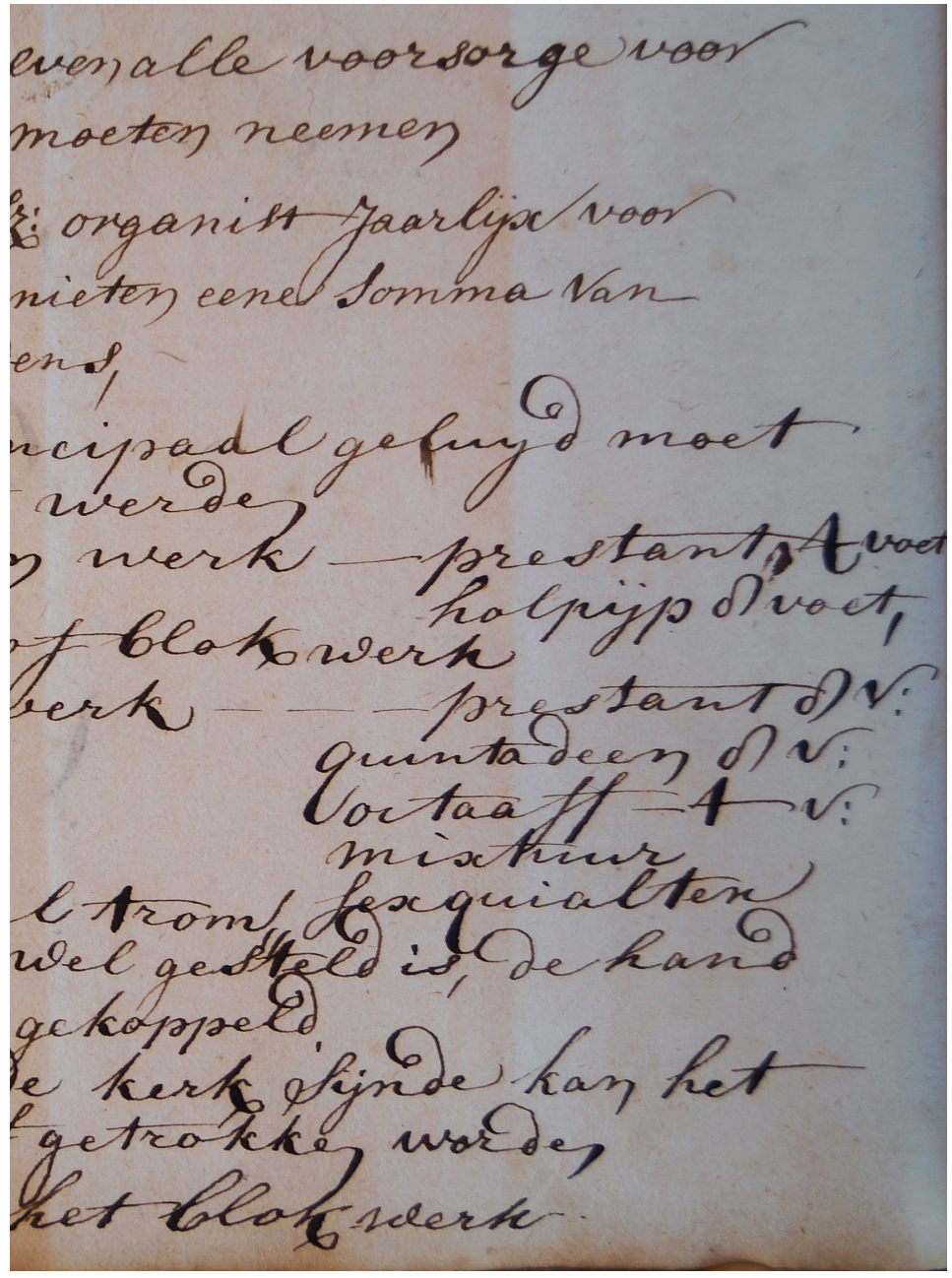
10 Original text: "Tot het principaal geluyd moet gebruykt werden…"

11 M.A. Vente. *Bouwstenen voor een geschiedenis der toonkunst in de Nederlanden*. Amsterdam: VNM, 1980, 99.

12 See Rogér van Dijk's contribution to this Report for a full transcription.



Dat ook den Selvenaal
den orgel sal moeten
en salden voor Sijn organ
traktament genieten e
Vijftig gulden,
tot het principa
gebruykt werd
in 't boven werk
het middel of blo
in 't rugwerk
in 't pedaal tro
pet als hij wel ge
claviere gekopp
NB: weijnigen volk in de ker
boven werk daan af getro
heel weynig volk, het b
alleen



even alle voorsorge voor
moeten neemen
Sijn organist Jaarlijx voor
nieten eene Somma van
ens,
ncipaal gebruyd moet
werde
werk — prestant 4 voet
holpijp 8 voet,
f blokwerk
berk — — prestant 8 V:
quinta deen 8 V:
octaaff — 4 V:
mixtuur
lexquialter
l trom
wel gestelt is, de hand
gekoppelt
e kerk zijnde kan het
getrokken worden
het blokwerk

Instruction for Pieter Hellendaal (1731 or 1732)

Het Utrechts Archief, Toegangsnummer 709, inventarisnummer 683: Resolutiën van de kerkmeesters en gemeente geburen der parochie, 1729-1795.

looks much less careful. It is therefore likely that the scribe received counsel from somebody who knew the instrument and which stops to use. It might have been an organ maker, or, more plausibly, an organist. Since the word "Blokwerk" appears in the text without introduction or explanation, its meaning must have been clear to both Pieter and Johan Hellendaal.
At the time of the instruction, the organ still had its three manuals, as is reflected by the phrasing "middel of blokwerk".

1733: Müller's project

The organ maker Willem van Limborgh maintained the organ from 1709 until his death in 1737. Johan Hellendaal made minor repairs in 1732. After these repairs, more extensive work was carried out by a better known organ maker, Christian Müller, from Amsterdam. In his project for a reparation in 1733, in which he would reduce the number of manuals from three to two, Christian Müller explained what he meant by "block werck":

> [Stops that are] in the middle or second division which without stops or knobs, and a 'block werck' is:
>
> 1. Prestant 16 voet
> 2. Octaaf 8 voet
> 3. Octaaf 4 voet
> 4. Octaaf 2 voet"[13]

To keep the Bovenwerk playable separately on the second manual, Müller made a cut-off valve for the Blokwerk. In doing so, the Blokwerk could actually be "blocked off".

1759: The Geheym-Schryver van Staat- en Kerke

In 1759, the "Geheym-Schryver van Staat- en Kerke"[14] started a series of descriptions of towns and landscapes in the Netherlands. The series was supposed to include seven volumes (one for every province), each being

13 Cf. Note 8, here 42. Original text: "int middel, of twede werck het welke sonder Rigister, of sonder treckers en een block werck is [...].".

14 Litterally "secretary of state and church"; "Geheym" means "secret".

subdivided into several parts ("stukjes"). Unfortunately, only the first volume, covering the Province of Utrecht, was published, in seven parts from 1759-1760. A pencil marking in a copy at Het Utrechts Archief identifies the author as J.A. [van] Wachendorf[f]. The Geheym-Schryver gives several specifications of Utrecht organs and bells.
The Geheym-Schryver claims his texts to be highly reliable. In his preface he complains that other writers all too often benefit from their comfortable libraries, doing nothing more than edit earlier works to "sell the People usually Old-News, by the deception of a different Style." Instead, this author promises: "One does not have to expect this from us at all. We have to see the things we describe with our own Eyes, hear them with our ears, or at least understand them from credible Men."[15] Indeed; the Geheym-Schryver must have consulted "credible Men" for his information on the organs, since there was no other way for a layman to obtain the organ specifications.
In the Geheym-Schryver's specification of the Nicolaï organ, the changes made by Müller are recognisable: Bovenwerk and Blokwerk could now both be played on the same manual; the Blokwerk could be turned on and off by Müller's cut-off valve. It is therefore understandable that the Blokwerk in the Geheym-Schryver's presentation looks like just another Manuaal-stop:[16]

15 *Geheym-Schryver van Staat- en Kerke der Vereenigde Nederlanden Beginnende met die van de Provincie Utrecht* (…), Vol. I/1, 'Aan den Leeser', (Utrecht/Amsterdam, 1759), s.p. Original text: "[Andere schrijvers] verkopen de Menschen doorgaans Out-Nieuws, door 't bedrog van een andere Styl. Dit heeft men van ons geenzins te wagten. Wy moeten de dingen die wy beschryven met onse eygen Oogen zien, met onse ooren hooren, of ten minste uit geloofwaardige Mannen verstaan." The copy of the library of Utrecht University has been digitised: http://hdl.handle.net/1874/288740.

16 Cf. Note 15. Here 43.

De inwendige Positie van dit Stuk is aldus:

Manuaal.	Rug-Positif.	Pedaal.
Prestant 4 voet	Sexquialter	Trompet 8 voet
Holpyp 8 v.	Mixtuur	
Siflet	Quintadeen	
Fluyt 4	Prestant 8 v.	
Quintfluyt	Octaaf	
Gemshoorn	Fluyt 4 v.	
Blokwerk		

Het Clavier begint onder met F. manqueert C. C* D. D*. E. F* G*, in het onderste Octaaf, maar boven gaat het tot C.
Het Clavier van het Rug-Positif, is het zelfde van het Manuaal.
Het Pedaal is aan he[t] Manuaal aangehangen en begint C. Is twee Octaaf lang.

The only thing the Geheym-Schryver has to say about the church's organists - he usually gives a shortlist of known players - is that the current player is "Musijk Meester Gerrit Vierkaat on an annual Payment of f 50,-,-." The limited information on the Nicolaï organists suggests that the Geheym-Schryver did not have Vierkaat as his informant (Vierkaat would have known at least his direct predecessor).
From whom did the Geheym-Schryver then get his information about the Utrecht organs? Which "credible Man/Men" did he consult? Writing in 1759, it could have been the Utrecht organ maker Jan Hendrik Hartman Bätz (1709-1770), who maintained all of the organs mentioned by the Geheym-Schryver: the Domkerk, St.-Pieter, St.-Jacob, St.-Nicolaas and the Lutheran church. Apart from the organs, however, descriptions of the Utrecht carillons and bells seem equally reliable. Another option might hence be the man that had

easy access to all the organs in the Utrecht protestant churches, as well as to all the towers and their bells: municipal carillonneur and organist of the Domkerk, Johann Philipp Albrecht Fischer (1698–1778). Fischer, who had previously been the organist of the Lutheran church, certainly met all criteria to be a "credible Man". In Utrecht, he was a published author and composer of music for important academic and civic ceremonies (such as the University's anniversary in 1736 and the memorial music for Princess Anna of Hannover).[17]

1787: Gideon Thomas Bätz

The latest source from the eighteenth century regarding the Nicolaïkerk is the documentation of the organ repair by Jan Hendrik Hartman Bätz' oldest son, Gideon Thomas, carried out in 1787. Just like Müller, Bätz seeks to describe the composition of the Blokwerk. He needs to make "several new feet, and languids on a large portion of the pipes belonging to the stops Quintadeen 8', the Octaaf 4', Fluit 4' and Sexquialter in the Rugpositief, as well as on the pipes of the Blokwerk consisting of a Mixtuur of three and a half stop."[18]

Preliminary conclusions

Due to a lack of evidence, there is no definitive answer to the question of who gave the Blokwerk its name, or why it was called "Blokwerk". The warden of the Nicolaï church, Müller, and G.Th. Bätz seem to define the Blokwerk primarily by understanding it as a "werk", a separate part of the organ, i.e. a division. The Geheym-schryver describes the Blokwerk merely as another Hoofdwerk-stop.

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17 P.J. Vermeulen, *Tijdschrift voor oudheden, statistiek, zeden en gewoonten, regt, genealogie en andere deelen der geschiedenis van het bisdom, de provincie en stad Utrecht*, Vol. III (Utrecht, 1849), 243.

18 Cf. Note 8. Here 47. Original text: "In het maaken van verscheijden nieuwe voeten, en corpsen aan een groot gedeelte van de pijpen behoorende tot de Registers de quintadeen 8 vt, de octaaf 4 vt, Fluijt 4 vt en sexquialter in het Rugpositief, als mede aan de pijpen van het Blokwerk bestaande in een Mixtuur van drie en een half register."

One explanation might be that the construction of the Utrecht Blokwerk-chest resembles that of a canoe - its grooves being carved in a block of wood. However, this "blockwise" construction method is not at all unique for 15th-century organ chests; it was applied later in smaller organs in particular.
If the Nicolaï-organ's chest would have had a cut-off valve, one might have assumed that the Blokwerk was given its name due to the fact that its sound could be "blocked off". However, such a valve was only installed in the organ after the word "Blokwerk" had already been applied to it.
Another hypothesis is that the fact that the remaining Blokwerk stops sounded all together inspired its name: the Blokwerk stops sounded "en bloc", as a whole, undivided body of sound.

Joachim Hess

Apart from the "Utrecht" circle of organists and builders, there is one eighteenth-century writer who mentions the Blokwerk on even more than one occasion: the influential organographer Joachim Hess (1732-1819).
In *Dispositiën*, an important collection of organ specifications, Hess published stop lists he wrote down himself, or that he obtained in written form from friends, colleagues, or in print. With some of his Utrecht stop lists, Hess gives some indications about how he received his information:

Domkerk
"Although I could not find the opportunity to examine this work from nearby, I nevertheless perceived while hearing the sounds, that its stops had to be very fine."

St.-Pieterskerk
"This Organ was made A[nn]o 1729 by the famous Mr. Wichleben, and is a fine piece in respect to its sound. I have played it myself with pleasure."

Lutheran Church
"This is a Small but comfortable Work to play."[19]

19 J. Hess. *Dispositiën der merkwaardigste Kerk-orgelen*. Gouda, 1774. Original texts: Domkerk,

No such personal testimonies exist for the organs of St.-Jacob and St.-Nicolaï. Furthermore, the organ specifications of these churches, as well as the stop list of the Domkerk, are identical to those of the Geheym-Schryver; while Hess even quotes the Geheym-Schryver literally in his assessment of the Domkerk organ. This also accounts for the Nicolaï specification, although Hess edited the Geheym-Schryver's description: the stops are ordered according to foot lengths, and, where the Geheym-Schryver's stops lack foot lengths, Hess filled them in. Here, Hess clearly made educated guesses that - with this unique instrument - inevitably led to a few errors. It seems evident that Hess relied on the Geheym-Schryver as the sole source for his Nicolaï description. The Geheym-Schryver did not explain his understanding of the Blokwerk, but listed it as if it were a final Hoofdwerk stop. This position in the stop list is copied by Hess. Yet, in the specification of the organ of St. Laurens, Weesp, Hess identifies another Blokwerk:

Manuaal
4 stops
Being a Blokwerk of 4 Stops, or an old-fashioned Spring-chest, namely:
Praestant 16 v. which cannot be turned off.
Octaav 4 v.
Mixtuur 6 st.
Scharp 6[20]

This specification puts everything in a different perspective. Hess, for example, is the first - and for at least a century the only one - to apply the name "Blokwerk" to any organ other than the Utrecht Nicolaï organ. Furthermore, Hess realises that a Blokwerk is not a stop - as the Geheym-

71:"Hoewel ik geen gelegentheid hebbe kunnen vinden, om dit werk van na by te toetzen, zo bespeurde ik egter onder het aanhooren der geluiden, dat deszelfs stemmen zeer fraai moesten zyn." Pieterskerk, 72: "Dit Orgel is gemaakt Ao. 1729 door den vermaarden Mr. Wichleben, en is een fraai stuk van geluid; ik hebbe het zelve met vermaak bespeeld." Lutherse Kerk, 73: "Dit is een Klein dog aangenaam Werkje om te bespeelen."

20 Cf. Note 19. Here 76. Original text: "Zynde een Blokwerk van 4 Registers, of een ouderwetsche Springlade, namelyk: Praestant 16 v. welke niet kan afgezet worden. (…)"

Schryver's layout suggested, but a chest. Interesting enough though, Blokwerk and spring chest can coexist in one and the same organ and sometimes even seem to be considered each others equivalents ("Blokwerk, or spring chest"). The "blok" element of the chest then seems to be the "obligato" Praestant 16'. "The elders call such a chest a Blokwerk," Hess added in a later publication.[21]

This interpretation, however, contrasts the technical layout of the Nicolaï Blokwerk (which actually could be "cut off" since Müller's repair). On the other hand, there is a parallel with the Nicolaï organ, since the latter's second manual operated both Blokwerk and the Bovenwerk (spring chest) from 1733 on.

Hess visited the Weesp organ personally.[22] A connection to the Utrecht circle might have run via the Weesp organist J.H. van Ketel and the organ builders who maintained the organs of the Nicolaï church, as well as the Weesp instrument, J.H.H. and G.Th. Bätz.

Did Hess really know what he was talking about when mentioning the Blokwerk? It is striking that Hess never used the word "Blokwerk" in situations where we would use it, for example when quoting Praetorius' information on mediaeval organs or when summarising Havingha's *Oorspronk en Voortgang*.[23]

Mentioning Blokwerks without calling them "Blokwerks"

As mentioned above, Gerhardus Havingha not only did not know the word "Blokwerk", but even denied the Blokwerk's (historical) existence in The Netherlands. Havingha originated from Groningen before moving to Holland. Hess, who seems to have had an alternative understanding of what a Blokwerk was, originated from Friesland, before moving to the southern part of the province of Holland. Both Havingha and Hess mentioned unregistrable organ chests, without actually calling them a Blokwerk.

21 J. Hess. *Over de vereischten in eenen organist.* Gouda, 1807, 52.

22 Cf. Note 21.

23 Cf. Note 19. Here 114-115; Cf. Note 21. Here 50. J. Hess. *Korte schets van de allereerste uitvinding, en verdere voortgang in het vervaardigen der orgelen, tot op dezen tijd*. Gouda, 1810, 1, 21-26.

I would like to add two other remarkable "absences" of the word "Blokwerk".

The first instance is a text by organist and consultant Willem Lootens (1770) who had been in close contact with the Utrecht organ maker Jan Hendrik Bätz during the building of the magnificent Zierikzee-organ. Furthermore, Lootens was acquainted to Bätz' former colleague Albertus van Os. Van Os told Lootens about the Nicolaï organ: "A certain trustworthy and able Organ maker (Albertus van Os, Vlissingen) told me, that he almost 40 years ago, personally at the taking apart of an organ in the Nicolai Church of the City of Utrecht, by Mr. Limburg organ maker (…); on the chests of the great Manual had found the year 1120, having no Registers or Sliders, but instead twelve ranks of Pipes, of which the largest was Prestant 12 foot, the others according to ratio; speaking this Manual on every Key all Pipes together, without having the possibility to cut any one off, so being nothing else than a large Mixture."[24]

On October 11, 1775, an advertisement in the *Utrechtsche Courant* propagated an unusual and exceptional three manual (!) cabinet organ for an auction: "An extra Elegant Cabinet organ, with three Manuals one above the other, which can all be played separately, as well as the middle one coupled to the lower one. Prestant 8', visible, and Holpyp 8' are the sounds of the lower Manual, and on the middle one 4 1/2 stop strong, the upper one 1 stop. The piece can be seen and played daily, and further information can be obtained with the maker who will be present."[25]

24 W. Lootens. *Beschrijving van het orgel in de Groote kerk te Zierikzee*. Zierikzee, 1770, 4. Original text: "Zeker geloofwaardig en kundig Orgelmaker (Albertus van Os te Vlissingen) heeft my verhaald, dat by na 40 Jaaren geleden, hy in eyge Persoon by het uitnemen van een Orgel in de Nicolai Kerk binnen de Stad Utrecht, door Mr. Limburg in leven Orgelmaker aldaar; op de Windladen van 't groot Manuaal had gevonden 't Jaartal van 1120, hebbende geene Registers of Schuyven, maar wel twaalf reken Pypen, waar van de grootste was Prestant 12 voet, d'overige na rato; sprekende dit Manuaal op ieder Toets alle Pypen gelyk, zonder men een eenige kon afsluiten, zynde dus niet anders als een groot Mixtuur aan te merken."

25 Quoted after A.J. Gierveld. *Het Nederlandse huisorgel*. Utrecht: VNM, 1977, 40. Original text: "Men zal op den 23 October 1775, namiddags, te Vreeswijk aan de Utrechtse Vaart, in de

Arend Jan Gierveld attributed this organ to Johannes Baars 1732-1799, who at the time lived in the village of Vreeswijk.[26] Furthermore, Gierveld was able to connect this organ to critical remarks made in Jan van Heurn's monumental *De Orgelmaaker*, published thirty years later: "I know of a Cabinet-Organ with three Manuals. On the Upper Manual stands a single Roerfluit 2 foot; the Middle Clavier has four or five voices, of which the largest speaks on 4 foot, while these have no registers, so they cannot be switched off; the Lower Clavier has one Praestant 4 foot repeating on c, and a Holpijp 8 foot, which can each be used separately, furthermore a Tremulant and undivided Coupler. I do not mention this as an example to be followed."[27]

herberg op het Schippershuis by Cornelis Hogerkamp, uit de hand presenteren te verkopen aan de meestbiedende: een extra Keurelyk Cabinetorgel met drie Clavieren boven elkanderen, welke yder apart, als ook het middelste met het onderste gekoppelt bespeeld kan werden. Prestant 8 in t sigt 8 voet, en Holpyp 8 voet is het geluit van het onder Clavier, en op het middelste 4 1/2 Register sterk, het bovenste een Register. Het stuk is dagelyks te zien en te bespelen, en nader informatie te bekomen by den maker welke daar prezent zal wezen."

26 Cf. Note 25. Here 40, 98-99.

27 J. van Heurn. *De Orgelmaaker* III. Dordrecht, 1805; facs. ed. Buren: Knuf, 1988, 330. Original text: "Mij is een Cabinet-Orgel met drie Hand-Clavieren bekend. Op het Boven Clavier staat alleenlijk eene Roerfluit 2 *Voet*; het Middel Clavier heeft vier of vijf Stemmen, waar van de grootste tegen 4 *Voet* spreekt, deze hebben geene Registers, en kunnen dus niet afgezett worden; het Beneden Clavier heeft eene Praestant 4 *Voet* repeteerende op *c*, en eene Holpijp 8 *Voet*, welke ieder afzonderlijk gebruikt kunnen worden, voorts eenen Tremulant en ongehalveerde Koppeling. Ik geef dit niet op als een voorbeeld ter navolging."

Assuming that the Baars-organ and the Van Heurn critique are indeed about the same instrument, its specification might have looked like this:

Lower manual
Praestant 8′ C-H = c0-h0 [4′ with repetition on c0]
Holpijp 8′

Middle manual
'Register 4 1/2 stg' C: 4′, 2′, 1 1/3′, 1′;
c1: 8′, 4′, 2 2/3′, 2′, 1 3/5′ or 4′, 2′, 2′, 1 1/3′, 1′

Upper manual
Roerfluit 2′

Coupler II to I
Tremulant
Compass C-d3

The second manual's chest is a rare example of what we would now label "Blokwerk". However, Van Heurn's extensive organ technical work limits itself to a short description of the spring chest, as far as he describes "outdated" chest types at all.

The nineteenth and first half of the twentieth century

During the nineteenth century, several historiographies of the organ were published; the non-registrable organ chest is a recurring element in each of them. Even in works with strong ties to Dutch organ culture, the word "Blokwerk" often remains absent.[28] Mentions of the Blokwerk in

28 For example: A.E. Kist. "Aanleidingen en oorsprong der orgels". *Symphonia. Opmerkingen voor organisten, Muzikaal Tydschrift*, 1836. N.C. Kist. "Het kerkelijke Orgel-gebruik, bijzonder in Nederland: een historisch onderzoek". *Archief voor Kerkelijke Geschiedenis* X (Leiden 1840), 189-334, in particular 212, 218-219. E.G.J. Gregoir. *Historique de la facture et des facteurs d'orgues.* Antwerp, 1865, re-print Amsterdam, 1972), 28 and 32-33. Joannes van Liefland. *Utrechts Oudheid.*

Broekhuyzen's manuscript *Orgelbeschrijvingen* rely on Hess' *Dispositiën*.[29]
The two most important - and, so it seems, only - publications to mention the word "Blokwerk" are both from the nineteenth century (Utrecht) Bätz circle. In both cases, "Blokwerk" appears exclusively in relation to the Nicolaï organ.
The first one of these two is a description of the Nicolaï organ by Florentius Cornelis Kist, a friend and advocate to the third generation Bätz. Kist's text includes the function of the cut-off valve added to the organ by Müller:
"The word Blokwerk constitutes of a wind chest with pipe work, without registers, whose pipes tone by tone, for as many registers or voices stand on it, all together speak simultaneously, when the cut off of wind is opened and the keys are pressed. The ancient use of Blokwerken originated at the time, by the adoption of some basic sounds [original 'grondgeluiden'], as being absolutely necessary audible in a full organ sound. These sounds are now placed upon a chest with the others, and are not operated by registers, but all at the same time by a cut-off valve."[30]
The other explanation of the Nicolaï Blokwerk comes from an important technical description by the organ maker Johan Frederik Witte, who had continued the Utrecht Bätz company. Apart from Hess some hundred years earlier, Witte is the first to apply the term Blokwerk to other organs as well,

1858, 161. W. Moll. "Berigten aangaande den staat van het kerkgezang in Nederland tijdens de opkomst en den bloei der oud-Nederlandsche muziekschool". *Verslagen der Koninklijke Akademie van Wetenschappen afd. Letterkunde* XII (1869), 105-132.

29 G.H. Broekhuyzen Senior. *Orgelbeschrijvingen* I. Utrecht: VNM (ed. A.J. Gierveld), 1986), Vol. 1b, p. 774-775, 826.

30 F.C. Kist. "Dispositie van het orgel, in de St. Nicolaikerk te Utrecht". *Nederlandsch Muzikaal Tijdschrift* 4/16 (1842), 133-134. Original text: "Het woord Blokwerk omvat eene windlade met pijpwerk, zonder registratuur, welker pijpen toon voor toon, voor zoo vele registers of stemmen als er opslaan, allen gezamenlijk, dadelijk spreken, wanneer de afsluiting der wind open gesteld en de klaviatuur aangehouden wordt. Het aloude gebruik van blokwerken is in der tijd ontstaan, door het aannemen van eenige grondgeluiden, als volstrekt noodzakelijk hoorbaar bij een volstemmig orgel. Deze geluiden nu worden op eene windlade bij den anderen geplaatst, en niet door registratuur; maar door eene wind afsluiting, allen te gelijk in werking gebragt."

seeing parallels with Perrault's descriptions of the organs in Paris (Notre Dame) and Reims.[31]
The Kist and Witte descriptions and definitions of the Blokwerk were taken up by the Utrecht organ historiographer Maarten Albert Vente. He popularised the concept of the Blokwerk. Publications appeared in the organ journal *Het Orgel*, as well as in newspapers.[32] His dissertation followed in 1942.[33] Yet, it took until the publication of Vente's *Die Brabanter Orgel* (1958) before Blokwerk became an internationally recognised word.

Blokwerk or Blockwerk?

Remarkably enough, Vente changed the original spelling of the obscure term "Blokwerk" slightly by adding an extra c: "Blockwerk". Was this because it "looked" more authentic that way?
Organ historians were eager to take over this idea of "Blockwerk". During the "Neo Baroque" episode after World War II, it fitted perfectly within the ideal picture of a Werkprinzip. Vente did indeed hope that his work would ultimately contribute to an "uplifting of organ building, as it already commenced here and there".[34] The spreading of the word "Blockwerk" was certainly supported by Vente's influential proof readers such as Walter Kaufmann and Hans Klotz. It is very instructive, for example, to compare the first edition (1934) of the latter's *Über die Orgelkunst der Gotik, der Renaissance und des Barock* with the revised edition (1975). The influence of the "Blockwerk" can be seen further in Bormann's *Die Gotische Orgel* (1966)

31 J.F. Witte. "Iets over het orgel in Nicolaïkerk te Utrecht". *Bouwsteenen* III. Utrecht: Vereeniging voor Noord-Nederlands Muziekgeschiedenis, 1881, 92-100.

32 M.A. Vente. "De Orgelgeschiedenis der Domkerk te Utrecht." *Het Orgel* 36/11-12 (1939), 78-79 and 86-87. M.A. Vente. "De Geschiedenis van het orgel der St. Joriskerk te Amersfoort". *De Standaard*, Amsterdam, 01-04-1940. Consulted on Delpher on 05-01-2017.

33 M.A.Vente. *Bouwstoffen tot de Geschiedenis van het Nederlandse Orgel in de 16de Eeuw.* Amsterdam, 1942.

34 M.A. Vente. *Proeve van een repertorium van archivalia betrekking hebbende op het Nederlandse Orgel en zijn makers tot omstreeks 1630*. Brussel, 1956, 4.

and in the work of Rudolf Quoika, who uses it in a shaky theory on organ-related *Stilwandlung* and *Geistesgeschichte*.[35]

Imagining the Blockwerk…

Lootens (1770) and G.Th. Bätz (1787) had already drawn parallels between the functioning of the Blokwerk and the Mixture stop; just like Praetorius had done when he wrote about the "Blokwerk avant la lettre".
Such comparisons are dangerous, however, since they bias the listener's expectations. In most modern organ cultures, the Mixture will be perceived as a high-pitched "fortissimo" stop, while such connotations are not necessarily true for playing on a Blokwerk, as frequent references to the organ's sound as being 'lovely' and 'sweet' might indicate.
An example is again the organ history of the Oude Kerk at Delft (1457), which could select any organ in Holland, Brabant, Flandres or Utrecht for the organ maker to use as a model according to which he would make the organ "as good and sweet and lovely of sound".[36] Blokwerks were at times perceived as being too loud, however. In 1517, Gerrit Pietersz was asked to make the organ of the Utrecht St.-Mariakerk "softer and sweeter according to the demands of the church [acoustics]".[37] A few years later, Jan van Covelens had to remake the same organ so that it could sound lovely and "duerafftich", i.e. strong, while the Blokwerk's sound would be made "lovely and sharp", without reducing the number of pipes.[38] Could "lovely" and "duerafftich" apply to the Blokwerk simultaneously? Or are these

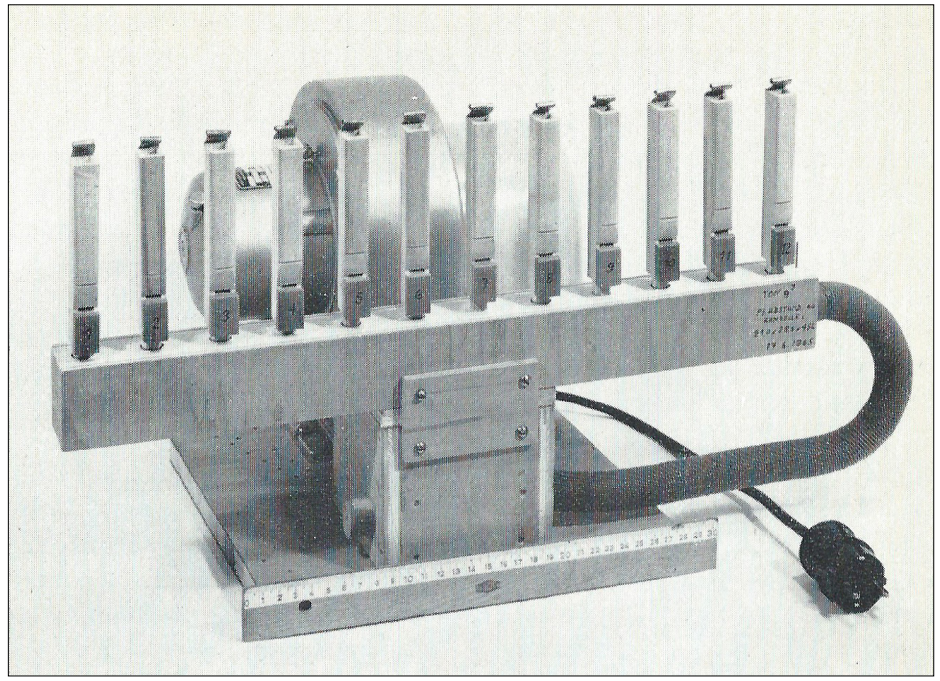
35 K. Bormann. *Die Gotische Orgel zu Halberstadt.* Berlin, 1966. R. Quoika. *Vom Blockwerk zur Register-orgel.* Kassel, 1966.

36 M.A. Vente. *Bouwstenen voor een geschiedenis der toonkunst in de Nederlanden* III. Amsterdam: VNM, 1980, 72. Original text: "(...) ende dit werck sal ic daerna acorderen alzo goet ende soet ende also lieffeliken van gheluut (...)."

37 C.C. Vlam and M.A. Vente. *Bouwstenen voor een geschiedenis der toonkunst in de Nederlanden* I. Utrecht: VNM, 1965), 283. Original text: "In den eersten sall meister Gherit datselve werck saffter ende zoeter maken nae eyssche der kercke (...)."

38 Cf. Note 37. Here 285. Original text: "In den eersten zall meyster Johan voirsz vermaken dair men sitt ende spueldt, geheell.".

characteristics in fact dichotomies (indicating Doof/Positie split-ups of the Blokwerk) that have been previously overlooked?
For the moment, it is sufficient to point out that "a Blokwerk = a Great Mixture" is an oversimplification. Future, systematic and comparative research on early sound perceptions might shed new light on the significance of the Blokwerk.
While such research is not available yet, the (imagined) sound of a medieval Blokwerk has stimulated the imagination of many organ historiographers since Praetorius.



In an attempt to research and understand the effect of double ranks, Karl Bormann constructed a working model that looks quite peculiar to the modern eye.

An exceptional example of a modern Blokwerk ("Prinzipalpleno 7-11 fach") can be found in the Stiftskirche of Waldhausen im Studengau (Austria).[39] In the light of such eagerness to (almost physically) experience the effect of ancient Blokwerken, the reconstruction of the "MOAB" (Mother of all Blokwerks; the 1479 Peter Gerritsz chest), an archetype of all Blokwerken, offers ample opportunity for extensive (artistic) research. After 400 years, Michael Praetorius' wish to have a Blokwerk reconstructed in order to listen to it and research it, could finally come true in the Orgelpark: "Und were zu wündschen, das man jetzo ein solch Werck widerumb lautendt und klingendt machte, damit man doch derselbigen Art, gegen der unsrigen jtzigen unterschiedlich hören und observiren möchte."[40]

Many thanks to Michael Tweed-Kent for checking my English.

39 Information provided by Peter Planyavsky (Vienna).

40 M. Praetorius. *Syntagma Musicum* II. Wolfenbüttel, 1619, 104.

Abstract

Until the second half of the twentieth century, the word Blokwerk was used to describe one organ in particular: the Utrecht Nicolaï organ. Or more specific, it was used to describe this organ's 1479 Peter Gerritsz chest.
The reconstruction of the earliest situation of the Nicolaï's Gerritsz-organ provided an opportunity to study the roots of the word "Blokwerk" in some more detail. When was it first applied to the organ and by whom? And how did historiographers define this unique specimen of early organ culture?
This paper follows the word Blokwerk through history and provides some insight in the background of its popularisation, and in the imaginations of its historiographers.

Jaap Jan Steensma

Jaap Jan Steensma is the organist of Utrecht University and co-founder of orgeladvies.nl, a cooperation he established with his mentor and colleague Peter van Dijk. In addition to his work as a researcher, he teaches at the Hogeschool voor de Kunsten Utrecht and publishes on a regular basis.