

3 The organ of the German Church in Stockholm

To Övertorneå and Hietaniemi and back again

Hans-Ola Ericsson and Lena Weman

The instrument discussed in this study originated during a period historians have identified as “Sweden’s Great Power Epoch” (1611–1721), when Sweden’s victories in the Thirty Years’ War (1618–48) saw its territory expand to vast areas outside its present-day borders (see Figure 3.1). Its territory comprised all of modern-day Finland; the area between St. Petersburg and Lake Ladoga; Estonia, Latvia, Bornholm, and a large part of central Norway; large islands in the south-east Baltic Sea; the north German coast; and Bremen.¹

Sweden was also a powerful international trading centre in this period, exporting flax and linen products, hemp, iron, and copper and importing new technologies, manufactured goods, books, and products from the Far East. It invested capital and foreign human resources in its iron-working industry. With economic power also came an intense interest in ideas and in intellectual and artistic exchange. Philosophers, musicians, and artists travelled from Germany to Swedish universities and the Swedish court, and it was this network of cultural exchange that provides the knowledge base for one of Sweden’s many modern contributions to the early keyboard revival, recounted here.

The German Church in Stockholm

In the late Middle Ages when the Hanseatic League controlled most of the lands surrounding the Baltic Sea, German merchants and craftsmen established a vibrant German colony in Stockholm, and a Lutheran congregation flourished in the city in the 1550s.² At first, this congregation used *Storkyrkan* (the Cathedral of Stockholm) as a place of worship, but in 1576 it moved to St. Gertrud’s Chapel, which it shared with the Finnish Lutheran congregation. Thirty years later, the two congregations separated, and St. Gertrud’s Chapel was enlarged and renamed the German Church. The German Church stands well preserved today in Stockholm’s Old City, the *Gamla stan*.

Upon completion of St. Gertrud’s Chapel’s enlargement in 1607, an organ with three divisions (Hauptwerk, Brustwerk, and Pedal) and twenty-one stops was ordered from the builder Paulus Müller of Spandau, Germany.³ It wasn’t long before the instrument was judged to be too small for the space and the congregation, and in 1622, under its titular organist David Ebel,⁴ the instrument was enlarged and most likely equipped



Figure 3.1 Map of Sweden

with a Rückpositiv.⁵ Three years later, in 1625, the organ was again augmented by adding eight stops and effecting other changes. The builders George Herman and Philip Eisenmenger of Rostock, Germany, completed this phase of the work.

In 1625 the German congregation appointed Andreas Düben, who in 1620 was named Sweden's Royal Organist, to the position of titular organist of the German Church. Originally from Leipzig (b. 1597 or 1598), Düben studied in Amsterdam with Jan Pieterszoon Sweelinck, and his name is also connected, mainly through

the compilations of his son Gustav and successive generations of Dübens (who were also Swedish court organists), to a large collection of manuscripts and early prints totalling over 2,500 works, including a great quantity of early keyboard sources, some of them *unica*, presently housed at Uppsala University.⁶ Dübén's appointment as organist at the German Church confirmed its status as an important musical centre in Stockholm; indeed, contemporary accounts describe musical life at the German Church as rich, Dübén himself being a highly skilled organist.⁷

During Dübén's tenure at the German Church, the organ underwent several enlargements and repairs. The most extensive changes took place between 1647 and 1651, when Jürgen Herman enlarged the organ by seven stops and one manual (the Oberwerk). By 1651 it had thirty-five stops divided between Hauptwerk, Oberwerk, Rückpositiv, and Pedal, and it was one of Sweden's finest, most distinguished, and largest instruments – in fact only the organ of the *Storkyrkan* with its fifty-one stops exceeded the size of the German Church organ.⁸

Between 1660 and 1690, several repairs were made: court organ builder Franz Boll worked on the instrument from 1674 to 1675, and Johan Nette, in the 1680s. Nette's work was inspected and certified in 1684, and the documentation associated with Nette's repairs has been used extensively in our historical reconstruction of the organ, primarily specifications and wind system.⁹

Andreas Dübén died in 1662, and his son Gustav replaced him at the German Church from 1663. The organ was repaired and changed several times thereafter, and this is well documented in the church's account books: George Woitzig repaired the instrument in 1669, and in 1684 more extensive repairs were undertaken by Johan Nette, as previously mentioned. Another repair took place between 1722 and 1723, at which time a new *Vox Humana* was added.

Eleven years later, in 1734, the organ builder Johan Niclas Cahman issued a certificate of inspection detailing the organ's condition and making it clear that the instrument was in very poor condition and impossible to tune. Extra repair work was completed in 1742, but in 1748 organ builder Olof Hedlund stated in an inspection certificate that it was of no use to do any further repair work. The parish later decided to order a new instrument, and in 1777 the organ of the German Church was finally dismantled.

This could well have signified the end for the once-hallowed instrument, but by an improbable, almost miraculous twist of fate, it was acquired by a church in Övertorneå, in the extreme northern region of Sweden. The German Church parish account stipulate that a payment of 250 *riksdaler* was made in 1779 for the old organ,¹⁰ and the unlikely initiative was Övertorneå's vicar Nils Wiklund's, who found himself in Stockholm that year to apply for a pardon from the king for preaching heresy and failure to deal with the "preaching disease" that had swept the Torne Valley.¹¹ After three years of legal proceedings, on 16 March 1779, King Gustaf III pardoned Wiklund and allowed him to resume his duties after a three-year ban.¹²

Why did Wiklund purchase the organ while he was in Stockholm? We will never know the precise answer, but we do know that he was financially supported in his legal struggle by members of the Övertorneå parish, and purchasing the organ of the German Church for them was perhaps a gesture of gratitude.¹³ In

the process, Wiklund saved a valuable instrument from destruction for a very moderate price.¹⁴ As if the deed was not enough, an even more astonishing story concerns the means by which Wiklund had the organ transported to its new home.

The trajectory began in 1779, by boat on the Baltic Sea and then upstream along the Torne River by boat and sledge. One might imagine oneself standing on the shore and suddenly spotting a ship filled with gilded pipes, sculptures, and many assorted organ parts. Excitement must have known no bounds when, the following year, the beautiful, shining, and elaborately decorated organ was installed in Övertorneå Church, where such treasures probably never had been seen before. Even today, one is struck by the extraordinary lustre and grandeur of the organ's magnificent facade.

Organ builder Matthias Svalberg installed the Hauptwerk and Oberwerk in Övertorneå church in 1780 (see Figure 3.2). The cost for this work was 700 *riksdaler*, substantially more than the cost to acquire the instrument itself but explained by the fact that the organ in its entirety was too large for its new location and that Svalberg had to build a new base and mechanism for the Hauptwerk and Oberwerk. Furthermore, the original Rückpositiv could not be accommodated at Övertorneå, and a solution was found by installing it in the church of Hietaniemi, a neighbouring village (Figure 3.3). As for the pedal division, it appears to have been lost, likely along the way between Stockholm and Övertorneå.



Figure 3.2 Picture of the organ in Övertorneå church, former Hauptwerk and Oberwerk of the German Church organ

Photographer: Leif Nybon



Figure 3.3 The organ in Hietaniemi church, former Rückpositiv of the German Church organ

Photographer: Leif Nybon

Since the seventeenth century, some of Sweden's best organ builders and craftsmen have worked on the German Church organ and its subsequent reinstallations at Övertorneå and Hietaniemi, and the latter must be regarded as foremost among Sweden's cultural treasures. Harald Vogel identified them as being among the ten most important in Europe.¹⁵

What is interesting about the handling of the organ after its reinstallation is that all the organ builders who engaged with it treated it with great respect and did not, as often has been the case with historical instruments, divest it of the rare beauty and ancient dignity that it harboured. They gently adapted the instrument to many evolving situations, but not once did they change any part of it that could not be restored to its original form. Indeed, the instrument at Övertorneå is one of the most thoroughly documented organs in the world, is of vital importance for the development of Swedish music history, and is one of Sweden's most remarkable cultural treasures.¹⁶

Documentation, historical reconstruction, and restoration: the complete Övertorneå Project (Hans-Ola Ericsson)

In 1989, when I was appointed professor of organ at the School of Music of Luleå University of Technology in Piteå, at the request of the governor of Norrbotten,

the northernmost county in Sweden, I submitted a number of projects that were likely to stimulate cultural activity in this remote part of the country.¹⁷ One of them turned out to be a complex, twelve-year endeavour with multiple ramifications: the restoration of the organ at Övertorneå and the historical reconstruction, or copy, of the German Church organ that lies at its origin and at the origin of the Rückpositiv at Hietaniemi.¹⁸

The order in which each phase of the plan was conceived, however, changed: the organ's historical reconstruction ended up preceding the restoration of the Övertorneå organ. In 1992, a comprehensive analysis and documentation of the organ at Övertorneå and the Rückpositiv at Hietaniemi began. This was followed by further study of the organ at Övertorneå to capture essential elements that would permit the most historically accurate reconstruction of the original German Church organ, in Norrfjärden Church, outside Piteå. This reconstruction was completed in 1997, and the new organ was inaugurated on 30 November of the same year (see Figure 3.4). The next phase of the project culminated in the restoration of the historical organ, *in situ* at Övertorneå. This was completed on Easter Day of 1999, and the organ was inaugurated the same year. Finally, a second historical copy was installed back in the German Church where it had originated (see Figure 3.5). With its inauguration in 2004, one might say that the organ of the German Church in Stockholm had come full circle, and a complex, twelve-year



Figure 3.4 Picture of the first reconstructed organ in Norrfjärden church

Photographer: Erik Holmstedt



Figure 3.5 Picture of the second reconstructed organ in the German Church (formerly St. Gertrud's Chapel) in Stockholm

Source: © Jürgen Howaldt

organ revival project had come to an end; we will now describe the project in some detail.¹⁹

Project documentation

Organ builders Anders Grönlund, Catarina Grönlund, and Mads Kjersgaard began by measuring every part of the instrument at Övertorneå. Harald Vogel and Hans-Ola Ericsson recorded the sound of each individual pipe. Munetaka Yokota measured pipe resonance, and Axel Unnerbäck conducted extensive research in the archives of the different churches involved, especially the archives of the German Church in Stockholm.

It was found that pipes from different periods were spread throughout the organ like playing cards in a well-shuffled deck. As many as six different organ builders were represented in what amounted to the manifestation, in a single instrument, of Sweden's rich and cosmopolitan musical and cultural legacy. The pipes were measured and described, and their metal alloys chemically analysed. Wind chests were documented by measurements and X-ray photography. The documentation

also included photographs and video recordings. All the material was transferred to the Antiquarian Topographical Archive (ATA) in Stockholm, where it is available to researchers.²⁰

Historical reconstruction

The threefold aim of making a historical copy was to remain as close as possible to the substance of the original seventeenth-century instrument in its full glory, gain a deeper knowledge of baroque organ building practice in Sweden, and give the School of Music in Piteå and environs an instrument that would appeal to organists interested in playing historically informed baroque repertoire suited to such an instrument.

Norrfjärden church was judged to be eminently suitable for the installation of the first historical copy. Architecturally, it is considered to be of great importance even though it was built in 1967, after a fire destroyed the original church; indeed, it is classified as a historical monument by the Swedish Central Board of Antiquities because of architectural features that recapture the spirit of the original structure, while introducing best practices in modern accessibility and acoustics.²¹

It was, importantly, decided that the reconstructed organ should be based on the original as it stood in the mid-1680s, after work had been completed on it by Franz Boll and Johann Nette. In the organ at Övertorneå, we were able to locate valuable, fine-sounding pipe material from Boll's time, providing us with the most reliable foundation on which to build a replica. It was also important that the facade of the organ be rebuilt as it had been left in its final and most ornamented version, also from the 1680s (see Figure 3.3).

Models for the wind chests and for several stops were thus taken from Övertorneå, and all woodwork was completed in oak and pine, as in the original. Metal pipes were manufactured according to the same design, using the same alloys as found in the original pipes and without the use of any modern machinery. This was accomplished in co-operation with the North German Organ Project at the School of Music in Gothenburg and through extensive analytical work at Luleå University of Technology. A great number of studies also provided the craftsmen assigned to the reconstruction work with appropriate exemplars to work from.²²

Organ decorations

The exquisitely rich ornaments and sculptures that belonged to the original organ in the German Church are preserved in Övertorneå and Hietaniemi, but not all of them were re-attached to the instruments upon their relocation by Svalberg in 1780. Rather, these different decorations were dispersed between the two churches. Faithfully recreating the original decorations as they stood in the 1680s in Stockholm was, therefore, an elaborate and monumental task.

The copy in Norrfjärden was decorated with only a few of the original sculptures, but when, in 2004, we had the opportunity to reconstruct the organ again in its original location, the sculptures and other ornaments were copied in their entirety, supported by new knowledge that had accrued of where they all precisely belonged.

The organ's original sculptures and ornaments were crafted in the workshop of Mårten Redtmer, who also supplied the great warship *Vasa* with its stunning wooden ornaments and sculptures, the symbol of Swedish power at the time of King Gustav II Adolf.²³ The connection between the ship and the organ actually supported the strategy to analyse the coloring of the sculptures on the *Vasa* and apply this knowledge to the organ and its facade. Compared to the organ in Övertorneå (see Figure 3.2), which was repainted several times, the Norrfjärden organ is extremely clear and bright, with a prominence of red and green, and richly decorated with gold leaf as it was originally.²⁴

The stylistic comparison between the organ facades and the ship's sculptures and ornaments was an extremely rewarding experience that yielded many interesting results. It was crucial to establish which of the *Vasa*'s sculptures were carved by Redtmer, which was achieved through comparisons with Redtmer's organ sculptures. A collateral advantage of this inquiry was a more accurate knowledge of Redtmer's style and artistic skill. And of course, it is fascinating that the features and history of the *Vasa* are woven into the life of small churches in the Torne Valley.

Tuning and temperament

Like most sixteenth- and seventeenth-century organs, the instrument in the German Church was originally tuned in meantone temperament; there is no reason to believe that it was retuned in any significant way while it remained in Stockholm. The organ was equipped with sub-semitone D-sharp/E-flat and broken octaves in all manuals, as well as a shortened octave in the pedal.²⁵ This aspect of the organ's specifications must be regarded, however, as rather extravagant. The organ's pitch was in "hoher Chorton," approximately five-eighths of a tone above $a' = 440$ Hz. When the organ was relocated in Övertorneå, it was re-tempered quite close to equal temperament; the sub-semitones were removed, and the octave was given its normal chromatic division. The reconstructed organs were, however, tuned in quarter-comma meantone at a pitch of approximately $a' = 467$ Hz at 22 °C, or roughly the original "hoher Chorton."

Specifications of the historically reconstructed organs at Norrfjärden and the German Church

The specifications of the historically reconstructed organs mirror the organ as it stood in the middle of the seventeenth century, referring to specifications at the time of its 1647–51 restorations and in part to Gustav Düben's 1684 report (see Table 3.1).

Table 3.1 Current specifications of the two historically reconstructed organs at Norrfjärden church and the German Church in Stockholm

Hauptwerk C, D, E, F-c ^{'''}	Rückpositiv C, D, E, F-c ^{'''}	Oberwerk C, D, E, F-c ^{'''}
Principal 8'	Principal 4'	Quintadena 8'
Quintadena 16'	Flött 8'	Zap: flöite 4'
Grosse Spiel fl. 8'	Flött 4'	Nassat 3'
Gedackt flött 8'	Super Octave 2'	Octava 2'
Octava 4'	Walt flött 2'	Spitzquinten 1 1/2'
Spitz flött 4'	Sexquialtra 2 chor	Zimball 2 fach
Quinta 3'	Cimball 3 fach	Schallmeijen 8'
Super Octava 2'	Dulcian 16'	Tremulandt
Mixtur 6 fach	Krumb Horn 8'	Vogelsang
Dussanen 16'	Geigen Regall 4'	Stern
Trommeten 8'	Pedal C, D, E, F-d [']	OW/HW
Brustwerk Regal 8'	Unter Bass 16'	HW/P
	Gedackter Bass 8'	RP/P
	Octava Bass 4'	Sub-semitones
	Posaunen Bass 16'	Manuals: d-sharp, d'-sharp
	Trommeten Bass 8'	and d''-sharp
	Dulsian Bass 8'	Pedal: d-sharp
	Corneten Bass 4'	

The future of the seventeenth-century organ

Current organ pedagogy and historical performance practice requires that stylistic details take on special importance. To understand how seventeenth-century organ works were performed and heard in their time and place of inception, we need to differentiate between different styles and epochs in a more articulated way than we do even now. After years of pioneering early music revival that notably includes Kenneth Gilbert's energetic advocacy of mechanical action organs in North America, we still require instruments that will bring us ever closer to the music. One can learn a great deal from the experience of playing instruments conceived with a given type of music in mind, in the case under examination, the music of the North German organ school of the seventeenth century. This school was introduced to Sweden through networks of music and culture that were mapped onto powerful trade routes of commercial activity during the years of Sweden's greatest political prominence.

A broken tradition is no longer a tradition; we cannot recreate objects from the past in their entirety, but we can let the instruments teach us about articulation, touch, tempo, and other aspects of performance. In doing so, we increase our historical awareness and, especially, our satisfaction in playing works that have been particularly remote from our present experience.

The Övertorneå project took place in a university context, and, in our opinion, this is very important. A university that is open to the future should be at the forefront of historically informed organ building, one of the reasons being that, paradoxically, historically informed organ building is of the most vital importance

to the creation of new music. Many leading contemporary organ composers have shown a great interest in the sound qualities, temperament systems, limitations, and possibilities these instruments possess. We have had the privilege of leading courses with composers around the world that involved working with historically informed organ reconstructions, and they yielded fascinating results.

The multifaceted project described in this study, and other similar projects, will have a great impact on the formation of future generations of organists.²⁶ These projects are, of necessity, based on mutual co-operation between scientific researchers, music researchers, professional instrument builders, and craftspersons to achieve the best possible result. These projects also suggest that high-quality organ building in the future will demand that we once again learn to implement historical traditions of workmanship. We must focus on obtaining maximum quality workmanship in order to recreate historically informed as well as innovative instruments where traditional techniques can meet new ones. At the same time, we gain and accumulate valuable knowledge on how to pursue the restoration of historical instruments.

Concluding words

As has been previously mentioned, the project's original sequence was to document, restore the historical instruments *in situ*, and, only after that, make historical copies. Through circumstances that we can only describe as "organic" (the pun is intended), the order of the project was reversed, which meant that we were not dealing with a static situation whose administration could be controlled to the utmost degree, but with a living art project. We would go so far as to say that it was the project that showed us how to proceed, and consequently, we believe that the methods and the order we ended up embracing were trendsetting. To analyse and document, then construct a historical copy, and only thereafter restore the original instrument is not counterintuitive: it is a more ethical, safe, sustainable, and knowledge-based process.

A dream blossomed into reality when the council members of the German Church decided they wanted a historical copy of their seventeenth-century organ. With this second reconstruction, full circle back to the original venue, we were able to use all the harvested knowledge in a very fortunate way.

Notes

- 1 The most comprehensive survey of Sweden's sociocultural and political history for this period is found in Nils Erik Villstrand, *Sveriges Historia 1600–1721* (Stockholm: Norstedt, 2011).
- 2 The official letter granting privilege of worship is, however, dated 1571. For this and all historical details in this section of our study, see Tobias Norlind, *Från tyska kyrkans glansdagar, I-III* (Stockholm: Musikhistoriska museet, 1945); Einar Erici and Axel Unnerbäck, *Orgelinventarium – bevarade klassiska kyrkorglar i Sverige* (Stockholm: Proprius, 1988); Axel Unnerbäck, "Orgeln i Tyska kyrkan – Orgeln i Övertorneå," in *Övertorneåprojektet*, ed. Lena Weman Ericsson (Luleå: Luleå tekniska universitet, 1997), 27–66.

- 3 Unnerbäck, "Orgeln i Tyska kyrkan," 28–9.
- 4 Norlind, *Från Tyska kyrkans glansdagar, II*, 32.
- 5 Ibid. After this enlargement, the organ still had two manuals and a pedal. As it now had a Rückpositiv, we conclude that the Hauptwerk was probably enlarged since the Brustwerk was gone and that the manual used for the Brustwerk was instead used for the Rückpositiv. Unnerbäck, "Orgeln I Tyska kyrkan," 35.
- 6 The Düben collection is available for searching online at "The Düben Collection Database Catalogue," ed. Lars Berglund, Kia Hedell, Erik Kjellberg, and Kerala J. Snyder, accessed 25 May 2016, www2.musik.uu.se/duben/Duben.php.
- 7 Charles Ogier, *Från Sveriges storhetstid: franske legationssekreteraren Charles Ogiers dagbok under ambassaden i Sverige 1634–1635* (Stockholm: Nordiska museet, 1978), 44.
- 8 Unnerbäck, "Orgeln i Tyska kyrkan," 46.
- 9 SE/SSA/0017/KIIIa/1 (Archives of St. Gertrud Church at the City of Stockholm Archives); Unnerbäck, "Orgeln i Tyska kyrkan," 47–51.
- 10 Toward the end of the eighteenth century, the main currency, 1 *riksdaler*, if calculated by the stable silver content of the coin which had not changed over time, equaled 4 *krona* (SEK) so that 250 *riksdaler* would amount to 1,000 *krona*. Allowing for foreign currency exchange in that period, the organ would have been sold for an amount close to 10,000 *krona*, for a total today of approximately 850 GPB. See Rodney Edvinsson, Tor Jacobson, and Daniel Waldenström, *Exchange Rates, Prices, and Wages, 1277–2008* (Stockholm: Ekerlids Förlag, 2010), 238–91.
- 11 Ecstatic lay preachers, mostly young women, had appeared in eighteenth-century Sweden in the wake of a radical Pietist revival. They would fall into trances and begin to preach, and the phenomenon was referred to by authorities as a form of contagion, or "preaching disease." See Jonathan Strom, "Pietism and Revival," in *Preaching, Sermon and Cultural Change in the Long Eighteenth Century*, ed. Joris Van Eijnatten (Leiden and Boston: Brill, 2009), 197.
- 12 Carl J.E. Hasselberg, *Kronologisk förteckning över handlingarna i religionsmålet mot Nils Wiklund m. fl. i Övertorneå 1773–1782* (Uppsala: Svenska kyrkohistoriska föreningen, 1931); SE/HLA/1010252.
- 13 Leonard Bygdén, *Hernösands stifts herdaminne: bidrag till kännedomen om prästerskap och kyrkliga förhållanden till tiden omkring Luleå stifts utbrytning* (Uppsala: Almqvist & Wiksell, 1923–6).
- 14 See n. 10, *infra*.
- 15 Speech given by Harald Vogel at the inauguration of the historically reconstructed version of the German Church organ in Norrfjärden, 30 November 1997.
- 16 Mads Kjersgaard, "Orgelarkeologiska undersökningar av instrumenten i Övertorneå och Hedenäset," in Weman Ericsson, *Övertorneåprojektet*, 79–99.
- 17 Thanks to the presence of the organ builder Grönlunds Orgelbyggeri AB, a great number of very fine instruments can today be found in Norrbotten.
- 18 I had become acquainted earlier in my career with the organs at Övertorneå and Hietaniemi, by whose sound and expressive capabilities I was extremely moved. (Hans-Ola Ericsson)
- 19 A prerequisite for the original project was to get a number of people involved in the actual physical reconstruction work and form a scientific advisory. We wish to acknowledge, in this respect, Professor Hans Davidsson (at that time, from the School of Music in Gothenburg), Anders Grönlund and Catarina Grönlund from Grönlunds Orgelbyggeri, organ builder Mads Kjersgaard, Professor Harald Vogel, Axel Unnerbäck from the Swedish Central Board of Antiquities, the organ builder and philosopher Munetaka Yokota, Hans Soop and Peter Tångeberg from the Wasa Museum in Stockholm, and consultants from Luleå University of Technology and Chalmers University of Technology in Gothenburg.

- 20 Henrik Löwenhamn, "Riksantikvarieämbetet: Om arkiv och bibliotek," accessed 7 June 2014, www.raa.se/hitta-information/arkiv-och-bibliotek/om-oss/.
- 21 See esp. Kerala Snyder, "Postludium," in *The Organ as a Mirror of Its Time: North European Reflections, 1610–2000*, ed. Kerala Snyder (Oxford: Oxford University Press, 2002), 341.
- 22 Kjersgaard, "Orgelarkeologiska undersökningar," 79–82.
- 23 The *Vasa's* first journey in 1628 ended in disaster after only one nautical mile when the ship sank. Not until the late 1950s was the ship located and salvaged, mostly intact. It is now housed in the Vasa Museum in Stockholm. See "Exhibitions," Vasa Museet, accessed 19 December 2016, www.vasamuseet.se/en/exhibitions; and John G. Arrison, "Time Capsule from the 17th Century: Stockholm's Vasa Museum," *Technology and Culture* 35/1 (1994): 158–67.
- 24 Hans Soop, former curator of the Vasa Museum and a consultant on our project, confirmed that Mårten Redtmer could indeed be connected to both the *Vasa* sculptures and the organ facades in the churches of Övertorneå and Hietaniemi. See Hans Soop, *The Power and the Glory: The Sculptures of Warship Vasa* (Stockholm: Kungliga Vitterhets historie- och antikvitetsakademien, 1986).
- 25 Here, broken octave signifies that the normal G-sharp and F-sharp keys are split. E is found on the lower G-sharp key, G-sharp on the higher, D on the lower F-sharp, and F-sharp on the higher. C is found on the normal E key. Shortened octave in the pedal means that D is found on the normal D-sharp and C on the D key.
- 26 One such project was the recreation of a four-manual Schnitger organ in Gothenburg. See the University of Gothenburg Göteborg Organ Art Center: Erik Bernskiöld, "Arp Schnitger's Work in Magdeburg and Berlin," accessed 28 April 2016, www.goart.gu.se/research/arp-schnitgers-work-in-magdeburg-and-berlin.