

ORGAN REGISTRATIONS IN
BENGT HAMBRAEUS'
LIVRE D'ORGUE
CRITICAL EXPLORATIONS AND REVISIONS

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ABSTRACT

The *Livre d'orgue* (1980/1) by composer and former McGill professor Bengt Hambraeus (1928–2000) is a collection of pieces written for Hellmuth Wolff's groundbreaking organ built in 1981 for McGill University's Redpath Hall. The collection, consisting of 48 pieces arranged in four suites, draws inspiration from the 18th century French classical *Livre d'orgue* tradition and includes detailed organ registrations for the Redpath Hall organ based on Dom Bédos de Celles' treatise on organ-building and registration *L'art du facteur d'orgues* (1766, 1770, and 1778). The organ registrations are vital to the performer's interpretation since they serve both as a guide for performing the music at the original Redpath Hall instrument and for expanding our knowledge of Hambraeus' interpretation of French classical registration practices. For the performer, some distinct problems arise when interpreting these registrations at the Redpath Hall organ. For one, Hambraeus' registrations, which were conceived away from the organ in the months prior to its completion, do not necessarily reflect the reality of the finished instrument. Additionally, the Redpath Hall organ has undergone a number of subtle but noteworthy changes in its voicing that must be considered when interpreting the registrations today. These, along with occasionally missing or incorrect markings in the score, required reflection and comment. My solution was to complete a careful analysis and review of the organ registrations in the *Livre d'orgue* in order to provide a more accurate and refined presentation of the pieces for future performers. This paper presents the findings of my research using examples from the 48 pieces in the collection corroborated by source material from the 18th century treatises on French organ registration. I also cite my research on the history of the construction and subsequent modifications to the organ in Redpath Hall and include an overview of Hambraeus' other organ music.

RÉSUMÉ

Le *Livre d'orgue* (1980/1) du compositeur et ancien professeur à L'université McGill Bengt Hambraeus (1928–2000) est un recueil de pièces écrites pour l'orgue exceptionnel d'Hellmuth Wolff construit en 1981 pour la salle Redpath de l'université McGill. Cette collection de 48 pièces, regroupées en quatre suites prennent leur inspiration du livre d'orgue traditionnel du 18^{ème} siècle et des détails quant à la registration y sont inclus pour l'orgue de la salle Redpath, lui-même basé sur le traité de Dom Bédos de Celles (*L'art du facteur d'orgues*, 1766, 1770, and 1778). Ces registrations sont vitales pour l'interprète étant donné qu'elles sont à la fois utile pour jouer cette musique sur cet orgue mais aussi approfondir nos connaissances sur la façon de jouer Hambraeus avec des sonorités classiques françaises. Pour certains, les registrations d'Hambraeus, qui ont été écrites des mois avant l'achèvement de l'orgue ne reflètent pas nécessairement les réalités de ce dernier. De plus, l'orgue de la salle Redpath a subi un certain nombre de changements subtils mais néanmoins très significatifs dans son harmonisation qui doivent être considérés dans l'interprétation des registrations. Ces dernières, combinées à des erreurs de notes ou carrément à des absences d'indications requièrent certaines réflexions. Ma proposition a été de fournir une analyse plus complète des détails de registration pour les futurs interprètes qui seront intéressés par cette musique. Ce travail présente donc mes découvertes en utilisant des exemples tirés des 48 pièces de Hambraeus soutenues par les traités du 18^{ème} siècle sur l'art de la registration en France. Je situe également mes recherches dans l'histoire de la construction de même que les modifications de l'orgue de la salle Redpath de l'université McGill et y inclus aussi un survol des autres œuvres du compositeur.

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I. INTRODUCTION – OPENING A TIME CAPSULE

Bengt Hambraeus' organ music has become somewhat of a rite of passage for those studying in the McGill organ department. Among his many contributions during his tenure at McGill University from 1973 to 1995 was his set of forty-eight pieces entitled *Livre d'orgue* written for the groundbreaking organ in McGill's Redpath Hall built by Hellmuth Wolff after Dom Bédos de Celles' 18th century treatise on French organ-building. Inspired by the new instrument's roots in the past, Hambraeus invoked the French 18th century *Livre d'orgue* tradition in order to craft his pieces with the organ's historical design in mind. For those who have come to refine our craft of performance on the organ in Redpath Hall, these pieces are perhaps as important to our understanding of the instrument as those by Couperin and de Grigny. Over the course of my research on the *Livre d'orgue*, I have come to appreciate Hambraeus' meticulously detailed compositional style and his sincere attempt to capture the essence of the French *livre d'orgue* tradition. I hope that my attempt through this project to explore and re-examine his *Livre d'orgue* will serve as a fitting tribute to Hambraeus' legacy as one of the great contributors to the organ repertoire of the 20th century.

I never had the chance to meet Hambraeus who died in 2000, but during my time at McGill I have had the opportunity to hear many stories and anecdotes about his tenure at the university from his colleagues and friends. Some, like John Grew, have provided indispensable first-hand accounts from Hambraeus' life that are featured extensively in this study. I was first introduced to the *Livre d'orgue* in the summer of 2009, a few months before moving to Montreal to start my master's degree. I had heard John Grew's concert in Redpath Hall at the McGill Summer Organ Academy where he performed excerpts from the *Livre d'orgue* along with some other oft-performed Redpath Hall repertoire such as de Grigny's *Offertoire* and Bach's *Pièce d'orgue*. I was struck by how convincing an instrument with roots in the 18th century could be in playing music written in our time. However, this was not a novel concept to Bengt Hambraeus; *Livre d'orgue* was but one of his many "time capsules" of intersecting musical experiences between the past, present and future.

Bengt Hambraeus and the Notion of the “Time Capsule”

Per Broman’s extensive dissertation on Bengt Hambraeus is aptly named *Back to the Future*,¹ no doubt a nod to Hambraeus’ own 1987 article “Tillbaka till framtiden: Ett par skisser om tradition i vår tid” (Back to the Future: Some Sketches on Tradition in Our Time).² Hambraeus’ article speaks to a meeting of the past, present and future, a concept he refers to as a “time capsule.” Broman admits that the concept is not completely clear, yet he attempts to define the term in connection with performance practice. He writes that “[it denotes] an often false notion of sealed tradition. It could relate to ethnomusicological societies or to a tradition that has developed according to its own premises.”³ Mauricio Kagel adds further insight into the notion of the time capsule when he writes that “everything that composers inherit from the past is a part of themselves, a retroactive present, so to speak. The separation between today and yesterday is no reality for people of my guild.”⁴ Hambraeus summarizes this meeting of the past and present in his preface to *Livre d’orgue* this way: “It is necessary that any ‘historic’ instrument be explored by creative composers today, and is thus not restricted exclusively to the performance of old repertoire. Consequently, the old tradition from the classical French *livres d’orgue* can be revived and utilized in a contemporary idiom.”⁵

It could be said then that from our perspective, *Livre d’orgue* is made up of multiple time capsules. One of these would be from the 18th century French classical aesthetic that informs the titles and structures of the pieces as well as Hambraeus’ meticulously planned organ registrations. On the other hand, there is a time capsule from 1981 with the inauguration of a new organ, and from the avant-garde aesthetics in which Hambraeus was composing. Yet another capsule concerns our own time, since the Redpath Hall organ is still here thus permitting us to explore the pieces on the original instrument as we find it today. Opening these time capsules means delving into both the traditional and the current, revealing experiences from the past as well as from our own time.

¹ Per F. Broman, “*Back to the Future*” *Towards an Aesthetic Theory of Bengt Hambraeus* (Landskrona: Parajett AB, 1999).

² Bengt Hambraeus, “Tillbaka till framtiden: Ett par skisser om tradition i vår tid,” *Musikrevy* 42, no. 7-8 (1987): 301-305.

³ Broman (1999), 204.

⁴ Kagel in Ulrich Dibelius, “Positions – Reactions – Confusions,” *New Developments in Contemporary German Music* [*Contemporary Music Review* 12, no. 1] (London: Harwood, 1995), 21-22. Originally in Mauricio Kagel, “Demokratur,” *MusikTexte* 31 (Cologne: Verlag Musik-Texte, 1989), 31.

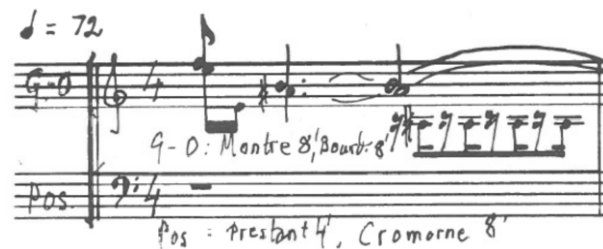
⁵ Bengt Hambraeus, “Preface,” *Livre d’orgue*, (St. Hyacinthe: Les éditions Jacques Ostiguy, 1981).

Registration Indications in *Livre d'orgue*: Interpretive Challenges

Within the first time capsule, we encounter the classical French tradition that saw a near-standardization of organ design and organ registration practice as reflected in the many treatises and prefaces from the numerous *livres d'orgue*. These often included instructions on how the various organ stops should be combined for each of the distinctive pieces and styles. The most thorough of these accounts comes from the Benedictine monk and master organ-builder Dom Bédos de Celles whose 1766 treatise *L'art du facteur d'orgues* provides accounts of contemporary organ-building practices as well as a chapter with precise recommendations on how to register and perform various pieces. Since Dom Bédos' treatise was to be the fundamental guide for the organ-builder Hellmuth Wolff when he designed the Redpath Hall organ, this chapter on organ registration was a logical starting point for Bengt Hambraeus when he composed *Livre d'orgue*.⁶

The pieces in the *Livre d'orgue* can generally be classified into two groups: those with traditional French classical titles and registrations like *Grand-Jeu*, *Plein-Jeu*, and *Tierce en taille* which closely follow Dom Bédos' registration instructions, and those which Hambraeus says “represent other tendencies than those which were common at Dom Bédos' time.”⁷ For example, in the *Basse de Cromorne* from volume 4 (see FIGURE 1.1), Hambraeus writes in the exact combination for a *Basse de Cromorne* as given by Dom Bédos who calls for “...au grand Orgue tous les 8 pieds pour l'accompagnement; et au Positif, le Prestant et le Cromorne.”⁸

FIGURE 1.1: “Basse de Cromorne (III),” *Livre d'orgue*, vol. 4, p. 70, m. 1.



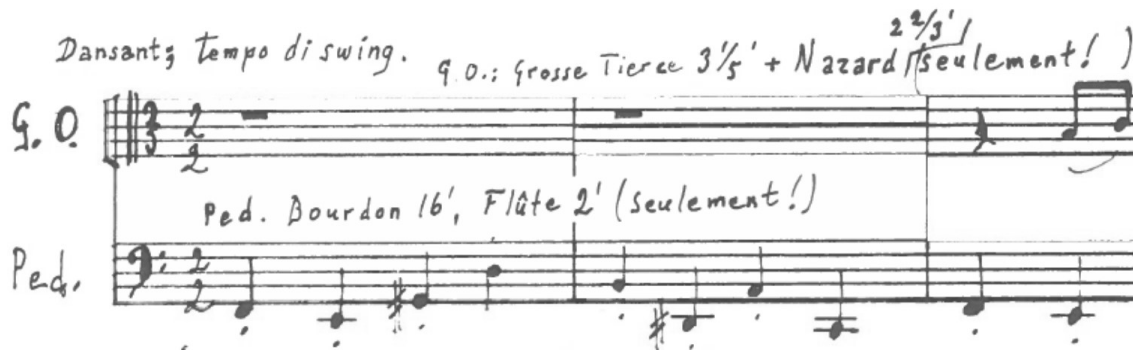
⁶ Hambraeus specifically references the Dom Bédos treatise as his basis for registration in the preface to his *Livre d'orgue*, noting that he “updates” Dom Bédos only “because – to paraphrase his own words – the taste has changed since his days.” These updates presumably refer to the registrations for the pieces “which represent other tendencies,” since nearly all of the traditionally-titled pieces are completely in line with Dom Bédos' guide. Hambraeus (1981), “Preface.”

⁷ Ibid.

⁸ “...all of the *Grand Orgue* 8's for the accompaniment, and the *Positif Prestant* and *Cromorne* for the melody.” Dom F. Bédos de Celles, *L'art de Facteur d'orgue*, 1766, 1770, & 1778. Tr. Fenner Douglass, *The Language of the Classical French Organ* (New Haven: Yale University Press, 1969, 1995), 225.

The *Ronde des tierces en couple*, in contrast, is an example of a piece which “represents other tendencies.” Hambraeus asks for specific French classical stops like the *Grosse Tierce* and the *Nazard* without specifically referencing any of the combinations from the Dom Bédos treatise (see FIGURE 1.2).

FIGURE 1.2: “Ronde des tierce en couple,” *Livre d’orgue*, vol. 3, p. 40, mm. 1–3.



For the most part, these registrations inspired by Dom work with very few adjustments when performed on the Redpath organ which is quite astonishing considering that Hambraeus composed all of the pieces before the organ was completed (his only reference being the future organ’s stop list and the Dom Bédos chapter on registration). That being said, since he was unable to hear these detailed registrations during the compositional process, some questions and problems arise when interpreting his instructions on the completed instrument. In addition, the organ is no longer exactly the same as it was when it was finished in 1981; minor but not insignificant modifications to the organ’s construction are also an important factor in interpreting Hambraeus’ registrations today. This brings me to the area of my research, which has been to make a careful exploration and analysis of Hambraeus’ organ registration instructions in his *Livre d’orgue* in order to provide a more accurate and refined presentation of the pieces for future performers. This is not intended to understate the value of Hambraeus’ original registrations, but is rather meant to better grasp his intentions for an organ which he had never heard before while also taking into account its current state after three decades of gradual changes and modifications.

Project Overview

My solution was to conduct a careful analysis and review of all of the organ registration indications in the *Livre d’orgue* in order to provide a refined presentation of the pieces for future performers. I

completed the first part of the project in the summer of 2015 by means of a self-directed special project which systematically documented and tested a number of the indicated organ registrations on the Redpath Hall instrument itself, noting how the individual registers balanced and blended through means of recordings and written observations. This also provided a chance to test modified and alternative registrations on the instrument according to my own experience with the behaviours and characteristics of the Redpath Hall organ. The summary of these findings, which focused on two types of registrations found in the music (the *plein jeu* and the *grand jeu*) along with the first detailed account of the history of the Redpath Hall organ, was presented as the final report for the Doctoral Special Project in November 2015. This project, as well as additional research on Hambraeus' organ music and French Classical registration conducted during my preparation for the comprehensive exam in the winter term of 2016, served as a basis for the final phase of my doctoral project that culminated in my lecture recital and this paper.

This final phase involved extending my initial field research on the *plein jeu* and *grand jeu* pieces to the other common French classical registrations found in the *Livre d'orgue* including the *Basse de Cromorne*, the *Dessus et basse de Trompette*, and the *Récit de Tierce en taille*, among other examples. In addition, I narrowed my focus from the broad survey on historical registration practices conducted in my special project to more specific examples from the Dom Bédos treatise. The reason for this shift in focus occurred because I was inclined to conclude that Hambraeus intended to emulate the Dom Bédos instructions more than the other treatises because of his concern in matching the aesthetics of the Redpath organ, which was designed using the organ-building principles from the Dom Bédos treatise. This factor, along with Hambraeus' relative unfamiliarity with historical French classical organs spoke to a more in-depth look at his interpretation of the Dom Bédos treatise.⁹ To aid in this research, I visited the only surviving large organ by Dom Bédos built in 1748 at the Church of Sainte-Croix in Bordeaux in order to test and record selected pieces to serve as a starting point in understanding Hambraeus' intentions for the Dom Bédos-inspired registrations in his score, and to discern how they might be emulated on the Redpath organ and other instruments. My visit to this organ in many ways brought Hambraeus' vision of Dom Bédos

⁹ Hambraeus himself never visited an original classical French organ. Indeed, at the time, the French classical style was not very well known. Early music specialists were more inclined to seek their inspiration in the repertoire and organ-building principles of the North German baroque.

full circle since he did not have the opportunity to visit this organ himself (the organ was restored to playing condition only in 1997).

This document, along with my February 2017 lecture recital, presents the findings of my research using examples from the 48 pieces in the collection and source material from the 18th century treatises on French organ registration. I also have included my research on the history of the construction and subsequent modifications to the organ in Redpath Hall in order to demonstrate its effect on Hambraeus' indications (chapter 2) as well as an overview of Hambraeus' organ music as it relates to the notion of the time capsule (chapter 3). In chapter 4, I present an overview of the 17th and 18th century French registration sources in order to give context to my exploration and refinement of the registrations in *Livre d'orgue* (chapter 5). Finally, I look toward further applications of this research with respect to historical organs based on my field work with the Dom Bédos organ in Bordeaux (chapter 6).

Methodology

My approach to this project has three distinct aspects. Firstly is in the documentation of the history of the Redpath Hall organ and its relationship to the compositional timeline of the *Livre d'orgue*. In addition to the archival documentation available from the Hellmuth Wolff Organ Collection and the Canadian Architecture Collection at McGill University, I relied on first-hand accounts from John Grew (Professor Emeritus at the Schulich School of Music) and James Louder (organ-builder and Wolff's former associate) when compiling the timeline of the organ project and the changes made to the organ in subsequent years. Both Grew and Louder agreed to be interviewed for the purposes of this project and their insights are referenced extensively in chapter 2. Further details related to modifications to the organ, particularly those done since 2006, have been verified by Denis Juget of Juget-Sinclair Organbuilders. Juget carried out much of the work in 2006 in partnership with Wolff and his firm currently oversees maintenance on the organ. Details related to the commissioning and composition of *Livre d'orgue* come from both the list of composition dates provided by Hambraeus in his scores as well as from John Grew's recollections. Information on the inauguration of the organ are documented in the papers and proceedings from the 1981 symposium

*L'orgue à notre époque*¹⁰ as well as the concert programs from both the inauguration in May 1981 and the hall reopening in 1982.¹¹

The second aspect of the project was the study of the French classical organ style including surviving original instruments, specifications, and primary documentary sources. The 17th century *livre d'orgue* prefaces and treatises on registration served as a starting point to understanding the evolution of the style throughout the 17th and 18th centuries. The thirteen most important examples of these sources are translated into English in Douglass (1969, 1995) which remains one of the most widely-cited publications on the French organ school. Historical organ contracts and organ specification lists also served as a means of comparing and contextualizing the Redpath Hall organ. During my research trip to Bordeaux, I recorded examples of 17th and 18th century pieces as well as pieces from the *Livre d'orgue* using the instructions from the Dom Bédos treatise to compare side-by-side with recordings in Redpath Hall. These recordings, which whenever possible were recreated with the exact stop combinations common to both the Dom Bédos and Wolff instruments, were useful in testing the idealized Dom Bédos registrations given by Hambraeus.

The third and principal aspect of the project was the vigorous testing of the registrations at the Redpath Hall organ. For each of the specific registrations, I identified potential problems in the score relating to the design of the instrument, the acoustics of the room, and the behaviour and interaction between the individual registers. I worked through various examples, recording excerpts for analysis as well as working with an assistant in the room and at the organ console to compare sounds from the organ loft and in the hall. For most of the examples, it was necessary to try several different combinations of similar stops in order to determine the most successful option. Since determining “successful” registrations is ultimately a subjective form of interpretation, I have attempted to give as many details as possible in both this paper and the accompanying critical notes. The subjectivity of these refinements also varies between combinations. Some examples are merely corrections of clear mistakes in the score and thus are not subjective at all, whereas other examples are a combination of my personal experience as a performer, the perceived limitations of the instrument, and my reference to the conventions of French classical organ registration.

¹⁰ Donald, Mackey, ed., *L'orgue à notre époque* (Montreal: McGill University, 1981).

¹¹ The text from these programs has been reproduced in the appendix (pp. 68–69).

II. THE ORGAN IN REDPATH HALL

History of Redpath Hall

The physical space that makes up the current Redpath Hall was built in 1893 as a reading room within McGill University's new library building. Designed by architect Sir Andrew Taylor, the building was presented as a gift to McGill by prominent Montreal business owner Peter Redpath and his wife Grace Wood (who were also the benefactors of the adjacent Redpath Museum completed in 1882). The library, with its innovative open steel-grate stacks, was considered a marvel of engineering at the time, allowing natural light to pour in through three stories of densely arranged stacks.¹² The reading room was not as well received; it was criticised for its high stone walls which echoed even the faintest of whispers. As a result, it was necessary to forbid talking (although the passing of paper notes was a popular solution taken up by students). The predominant use of stained glass also restricted natural light and the chandeliers and reading lamps were unable to compensate for the lack of light. In addition, the grandiose entrance to the hall opened directly onto the reading room causing further disruptions for the library users inside. The building was expanded several times after its completion, first to extend the library stacks in 1900, then to further enlarge the building in 1921. By 1952, the University had again outgrown the limited space of the library building and the firm McDougall, Fleming & Smith built a modernized extension. The extension, which more than doubled the floor space of the original building included various new reading rooms and a new circulation desk. At this time, the old reading room was sealed off from the rest of the library and it was converted into an auditorium and concert venue for use primarily by the Faculty of Music.¹³ The hall was also not entirely successful in this new role since the acoustics were considered by many to be too live for most types of performances, particularly piano and chamber

¹² Rebecca Michaels, "Redpath Hall and Library," Canadian Architecture Collection.
http://web-cac.library.mcgill.ca/campus/buildings/Redpath_Hall.html (accessed March 20, 2017)

¹³ John Grew, "Redpath Hall and the Faculty of Music," *Fontanus* 6 (1993), 147–149.
<http://fontanus.mcgill.ca/article/view/82/94> (accessed March 20, 2017)

music.¹⁴ Nevertheless, the hall served as the faculty's main concert venue until the opening of Pollack Hall in 1975. By this time, Redpath Hall had fallen into severe disrepair and it was almost entirely abandoned.

Conception of the Organ Project

The idea for a new organ in Redpath Hall was put forward as early as 1974 by John Grew who had been teaching organ and harpsichord at McGill on a part-time basis since 1971 (he was appointed a full professor in 1974). Grew proposed that the instrument be designed in the French classical style for the realization of authentic performances of works by 17th and 18th century French composers.¹⁵ At the time, only a few instruments with French classical influences had been attempted in North America. The earliest North American attempt at recreating a French classical specification was the four-manual, 54-stop gallery organ by Gilbert F. Adams at St. Thomas' Church in Manhattan completed in 1969. Though the instrument was an important first step towards an informed view of historical performance practice, it was by no means intended to be an exact historical copy. Another early experiment was Charles B. Fisk's opus 68 for the University of Vermont completed in 1976. Fisk sought to use the French classical model to create an eclectic instrument capable of playing "the full gamut of organ literature through the year 1825."¹⁶ Nevertheless, until the Redpath Hall organ was built, no organ-builder in North America had attempted to faithfully replicate the exact dimensions and specifications of a French classical instrument.

In the search for a possible builder, Grew and philanthropist Dr. Huntington Sheldon (the Lord Strathcona professor of pathology in the Faculty of Medicine and the principal donor for the new organ) approached the French organ-builder Jean-Georges Koenig, making a trip to France in 1976 to visit Koenig's ground-breaking instrument from 1967 at the Church of Saint-Georges in Sarre-Union. The organ was one of only a few modern organs built according to French classical design principles (it was a completely new organ constructed inside the church's original organ case from 1717). This visit and meeting with Koenig was very positive, but ultimately Grew and Sheldon decided to approach the Laval, Quebec-based organ-builder Hellmuth Wolff for the project, after making a trip out to hear a concert on his recently completed organ at the Abbey of Notre-Dame-de-Lac in Oka, Quebec. Although Wolff would eventually agree to take on the project, he was

¹⁴ John Grew, interview by author, Montreal, October 22, 2015.

¹⁵ Grew (1993), 148.

¹⁶ C. B. Fisk, Inc. "Opus 68 About" http://www.cbfish.com/instruments/opus_68_about (accessed November 20, 2015)

initially reluctant to build the instrument because he had very little experience with historical French organ-building practices. He consequently proposed to base the organ primarily on the Dom Bédos treatise since it was the most detailed source for organ construction from the period.

Design, Construction, and Inauguration

Work on the organ began in 1977 with Wolff's firm making a trip to France to measure some important historical organs and organ cases. Of particular importance were the well-preserved instruments in Souvigny (Clicquot, 1783) and Poitiers (Clicquot, 1787). The suspended action found at Souvigny provided Wolff with important measurements (since Wolff had never attempted to build a suspended action) while the Clicquot pipework provided a secondary reference to the scalings and mixture compositions of the Dom Bédos treatise. No less than five case designs and dozens of stop lists were discussed at the outset of the project. One of the initial designs opted for a pair of towers on either side of the *Grand Orgue* case, however this concept was abandoned because the slanted roof of the hall would only permit one central tower. The resulting design required the pedal division to be placed behind the main case of the organ which is reflective of the Alsatian organs made by Andreas Silbermann. The organ case also displays some distinctly northern European elements like the pointed turrets which are a common feature of northern European instruments and hint at Wolff's previous experience building organs in this style.¹⁷

The final design was for a 37-stop (51-rank) organ of three manuals and pedal in a two-tiered case with a *Positif* positioned at the base of the organ behind the player, with the *Grand Orgue* and treble-compass *Récit* positioned above the playing console. The *Pédale*, as mentioned before, was designed to be placed behind and below the *Grand Orgue* in a partially enclosed case. Some other minor changes to the case were included quite late in the building process. The most significant change was at the request of John Grew who asked to have wooden casework added along the top of the *Grand Orgue* case to match the design of the *Positif* (see FIGURE 2.1). There was also a small

¹⁷ Wolff saw his pointed turrets as an *hommage* to the rounded turrets on the old organ in Saint-Germain-des-Prés in Paris:

À St-Germain, les architectes avaient trouvé une façon élégante de briser la monotonie des plates-faces en y insérant des petites tourelles rondes, une idée que nous avons retenue; nos tourelles sont pointues, cependant.

(At St. Germain, the architects had found an elegant way of breaking up the monotony of the flat façade shape by inserting small round turrets, an idea which we retained; nevertheless, our turrets are pointed.)

Hellmuth Wolff, "L'orgue de la Salle Redpath de l'université McGill," Mackey (1981), 1.

An image of the rounded turrets on the old organ in St. Germain can be viewed here:
<http://organ-au-logis.pagesperso-orange.fr/Pages/Abecedaire/ParisSGP.htm>

change made to the façade of the *Positif* that initially included woodcut Latin mottos below the two crests on either side of the central tower. These were removed from the design in favour of two small panels with woodcuts of musical instruments that were added at the bottom of the pipe windows on each side. The façade pipes thus had to be raised slightly to compensate for this addition.

FIGURE 2.1: Comparison of early design concept, left, (from cover of *Livre d'orgue*) and finished instrument, right (Hellmuth Wolff Organ Collection).



Although John Grew initially proposed that the organ be tuned at $a=392$ Hz after the historical French classical examples (one whole tone below modern pitch), this proved to be too controversial at a time when the majority of organs were being pitched at modern pitch ($a=440$ Hz). Instead, a compromise was reached with a pitch of $a=415$ Hz, which was becoming common in the early music community as an example of a lower historical pitch. The temperament was also unusual for the time, constructed by Pierre-Yves Asselin after an historic temperament by D'Alembert.

A number of other compromises were incorporated into the final design of the organ. For example, the bellows that provide the wind are not cuneiform bellows as shown in the Dom Bédos treatise but are rather a single square bellows made in a modern style (Wolff felt it was too risky to build cuneiform bellows as he had no prior experience with them). Wolff also elected to construct two pedal-boards, one in the historical French style and the other in a more standard configuration

with longer keys to allow for the comfortable execution of a wide range of repertoire. The pedal division itself was also uncommonly large, and included 16' stops (modeled after Dom Bédos' largest organs) to permit the playing of a wider range of music. The repertoire possibilities of the organ were also significantly broadened by the composition of the mixtures, which, although modeled after Dom Bédos and Clicquot, have breaks according to the northern European practice (see FIGURE 2.2). Dom Bédos' outline for the composition of the *Fourniture* for the organ based on the 8' *Montre* with 16' *Bourdon* breaks only three times with a tendency towards the doubling of the lower partials in the plenum.¹⁸ The *Cymbale*, which repeats more frequently at the fifths and fourths, was also pitched lower than its northern European counterparts thus lending to a plenum with many doubled harmonics. The Redpath Hall organ follows this breakdown of ranks for the *Fournitures* and *Cymbales* but Wolff intentionally added more breaks to the *Fournitures* in order to give them a more Germanic sound to facilitate a wider variety of repertoire. However, in order to preserve the French sound of the *Fourniture*, Wolff added a half-draw feature so that the 16' harmonics of the *plein jeu* could be added or eliminated according to the repertoire requirements (the half-draw 16' options are shown in parentheses in FIGURE 2.2).¹⁹

¹⁸ The model comes from the 8' *Positif* of a 16' *Grand Orgue* which has the same composition as the 8' *Grand Orgue* in Redpath Hall.

¹⁹ Wolff explains his methodology for the *Fourniture* in his paper for the 1981 Symposium:

En ce qui concerne le Plein Jeu, ce type d'harmonisation permet une certaine retenue. En plus nous avons composé les mixtures de sorte qu'on puisse utiliser les fournitures avec ou sans les cymbales, en faisant des fournitures cymbalisantes, c'est-à-dire avec des recoups en quintes et quarts plutôt qu'en octaves. En faisant des mixtures cymbalisantes, nous nous sommes quelque peu éloignés de la bonne conduite, mais-là, François-Henri Clicquot nous a précédés il y a longtemps. En plus, nous avons écarté l'idée astucieuse de faire une fourniture caméléon, qui pourrait se cymbaliser ou se décymbaliser par un registre à deux positions. Au lieu de cela, on peut ouvrir ou fermer le rang grave de la fourniture du Grand-Orgue, donc on peut s'en servir pour une fugue sans que l'harmonique de 16' dérange la ligne du thème. Ainsi avons-nous voulu rendre justice à la musique polyphonique écrite pour le Plein Jeu, sans pour autant sacrifier le son caractéristique français. (As far as the *plein jeu* is concerned, this type of voicing allows a certain restraint. In addition we have composed the mixtures so that we can use the mixtures with or without the *Cymbales*, making *Fournitures cymbalisantes*, which is to say with breaks in fifths and fourths rather than in octaves. By making mixtures *cymbalisantes*, we have somewhat distanced ourselves from the right path, but François-Henri Clicquot preceded us a long time ago. In addition, we have dismissed the astute idea of making a chameleon *Fourniture*, which could *cymbaliser* or *decymbaliser* by a slider with two positions. Instead, one can open or close the lowest rank of the *Fourniture* of the *Grand Orgue*, so one can use it for a fugue without the 16' harmonic disturbing the theme. Thus we wanted to do justice to the polyphonic music written for the *plein jeu*, without sacrificing the characteristic French sound.)

Wolff in Mackey (1981), 8.

FIGURE 2.2: Mixtures for an 8' Organ by Dom Bédos (Left) and the Redpath organ (Right).

Mixtures for 8' Organ, after Dom Bédos		Grand Orgue Mixtures, Redpath Hall	
<i>Fourniture IV</i>		<i>Fourniture IV</i>	
C	$(2') - 1\frac{1}{3}' - 1' - \frac{2}{3}'$	C	$(2') - 1\frac{1}{3}' - 1' - \frac{2}{3}'$
f	$(2\frac{2}{3}') - 2' - 1\frac{1}{3}' - 1'$	c	$(2\frac{2}{3}') - 2' - 1\frac{1}{3}' - 1'$
f'	$(5\frac{1}{3}') - 4' - 2\frac{2}{3}' - 2'$	f	$(4') - 2\frac{2}{3}' - 2' - 1\frac{1}{3}'$
		f'	$(5\frac{1}{3}') - 4' - 2\frac{2}{3}' - 2'$
		f''	$8' - (5\frac{1}{3}') - 4' - 2\frac{2}{3}'$
<i>Cymbale III</i>		<i>Cymbale III</i>	
C	$\frac{1}{2}' - \frac{1}{3}' - \frac{1}{4}'$	C	$\frac{1}{2}' - \frac{1}{3}' - \frac{1}{4}'$
c	$\frac{2}{3}' - \frac{1}{2}' - \frac{1}{3}'$	c	$\frac{2}{3}' - \frac{1}{2}' - \frac{1}{3}'$
f	$1' - \frac{2}{3}' - \frac{1}{2}'$	f	$1' - \frac{2}{3}' - \frac{1}{2}'$
c'	$1\frac{1}{3}' - 1' - \frac{2}{3}'$	c'	$1\frac{1}{3}' - 1' - \frac{2}{3}'$
f'	$2' - 1\frac{1}{3}' - 1'$	f'	$2' - 1\frac{1}{3}' - 1'$
c''	$2\frac{2}{3}' - 2' - 1\frac{1}{3}'$	c''	$2\frac{2}{3}' - 2' - 1\frac{1}{3}'$
f''	$4' - 2\frac{2}{3}' - 2'$	f''	$4' - 2\frac{2}{3}' - 2'$

The instrument began to take shape in Redpath Hall in the fall of 1980 and the organ case was mostly in place by December of that year. The hall remained closed at this time and since the old laminate floor was in poor condition, it was decided to replace it before reopening the hall. Wooden beams from the Macdonald Physics Building, which itself was undergoing extensive renovations at the time, were used to construct a new wood floor for Redpath Hall. However, delays in construction meant that the new floor was not installed in time for the May 1981 inauguration concert. As a result, the voicing of the organ, carried out exclusively by Wolff and his associate James Louder, needed to be done by guesswork according to their predictions on how the new floor would affect the future acoustics of the room.²⁰ Louder was responsible for the majority of the flue stops on the organ, including the *Positif* and the *Pédale*. Wolff voiced the *Montre* and most of the reeds, except for the *Voix humaine*, voiced by Louder. The organ was in a partially playable condition with most of the installation work finished in March 1981; however, the voicing process was particularly drawn out and fell behind schedule. Such was the case that the voicing continued up until the final hours before the inauguration concert of May 1981. John Grew noted that he only actually heard the *Pédale Trompette* for the first time when he played it in the concert.²¹ He also

²⁰ James Louder, interview by author, Montreal, October 13, 2015.

²¹ Grew interview, October 22, 2015.

noted that the *Voix humaine* was not ready and could not be played in the inauguration concert. Moreover the hall was not in an ideal state to host the concert since the original floor had already been removed down to the subfloor in anticipation for the installation of the new floor, so a tar-based temporary floor was hastily installed over the subfloor so that the concert could go ahead. After the symposium, the hall was once again closed to the public so that work on the floor installation could continue. During this time, the remainder of the pipe voicing was completed and the organ was also used for lessons and classes. The hall was finally reopened with a ceremony and concert in September 1982 at which time the hall was christened the “ceremonial hall” of McGill University.²² John Grew and Donald Mackey performed at the hall reopening concert.²³

Changes and Revisions

Since the reopening of the hall in 1982, the organ has undergone a series of minor but not insignificant alterations to improve some of the initial design problems. The pipes of the *Récit* division, located in the top part of the central tower above and forward of the *Grand Orgue Cornet*, did not hold their tuning in the upper register. It was determined that the source of this problem was the cramped location of the pipes inside the narrow tower (see FIGURE 2.3). Pipes that are positioned in close proximity to the sides of the case (or to each other) can cause interference in the sound which makes the pipes sound out of tune. This problem was exasperated by the unusually wide scale of the pipes as described by Dom Bédos that meant the pipes were positioned even closer together. An initial attempt to solve the tuning problems involved keeping the access doors on the back of the *Récit* division open, however this did not significantly improve the sound. The second attempt at improving the tuning was to replace the top eight notes of the 2' and 1½' ranks of the *Récit Cornet* with new pipes of a slightly smaller scale which would take up less space in the case and be easier to tune.²⁴ Although this change yielded some improvement, in 2006 it was decided to replace all three ranks of the *Cornet* with newly-cast, smaller-scale pipes.²⁵

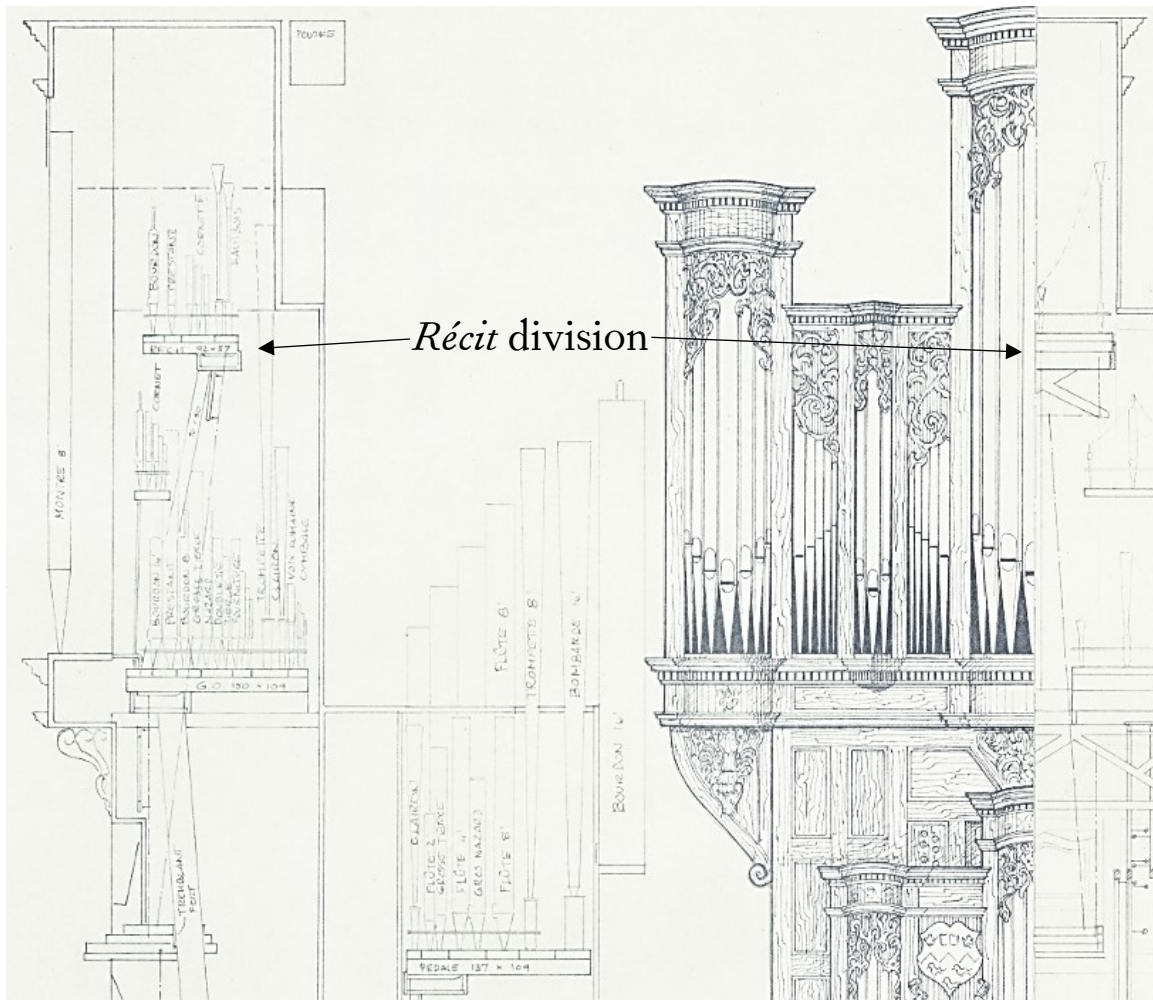
²² Ibid.

²³ The programs for the inauguration concert and the hall reopening are reproduced in the Appendix (pp. 68–69).

²⁴ The exact date of this work has not been confirmed. According to James Louder, it was executed in the early 1990's.

²⁵ This work was carried out by François Desautels who was working in Wolff's firm at the time.

FIGURE 2.3: Location of the *Récit* Division in the Central Tower (Hellmuth Wolff Organ Collection).



The second major change to the organ was also made in 2006 when the *Bombarde* 16' of the pedal was significantly updated. The *Bombarde* stop was envisioned as a compromise to permit the playing of Bach and other significant German music on the French classical organ. The 16' pedal reed stops were mostly a later addition to the French organs and certainly only the very largest instruments would have had them. It was therefore justified that the *Bombarde* for the Redpath organ be conceived as a Germanic *Posaune* stop to allow the playing of a wider variety of repertoire. Wolff based his scaling on a *Posaune* designed by Charles Fisk but added his own French-style wooden shallots to match the other reeds in the organ. Wolff also designed the lower 10 pipes from AA (A0) to G (G1) with half-length resonators. Two competing theories as to why Wolff opted for half-length pipes in the bass have been put forward. James Louder believes that Wolff, who was concerned about the size and cost of the project, worried that they would run out of money trying

to build the organ and opted to build the less-expensive half-length resonators to cut costs.²⁶ John Grew maintains however that the decision was entirely aesthetic, as Wolff was concerned that full-length resonators would look unattractive because they would stick up above the top of the pedal case and be partially visible to the audience.²⁷ Both of these are plausible explanations, and they are equally likely to have been factors in Wolff's decision to build the half-length resonators. Nevertheless, the combination of the half-length pipes and the experimental wooden shallots led to less than satisfactory results. Half-length pipes are more difficult to voice than their full-length equivalents which resulted in an inconsistent sound throughout the rank. In addition, the wooden shallots spoke slowly and unevenly making anything except slow-moving pedal lines difficult, if not impossible, to play. The 2006 alterations (carried out by Wolff with Denis Juget) involved replacing the ten original half-length resonators with full-length resonators and replacing all of the original shallots across the entire rank with newly-designed metal shallots based on the *Posaune* stops from Gottfried Silbermann's organs. Initially, the voicing of the new shallots was difficult to control, however after further work by Denis Juget in 2011, the speech of the pipes was vastly improved and at present the pipes speak faster and have a more consistent sound across the whole rank.

In addition to the changes to the pipework, alterations have also been made to the wind supply and the key action. Around the time when Wolff was designing the organ, there was concern among organ-builders about the quality of the leather that was being produced from modern tanning processes. Newer instruments that had been built after the Second World War had significant problems with the leather seals on the bellows causing leaks and inconsistent wind pressure.²⁸ Builders began experimenting with alternative materials until a solution to the faulty tanning process could be found. For the bellows on the Redpath Hall organ, Wolff chose a material called polydon, a synthetic fabric used in parachute making. The material was difficult to work with and was never entirely successful at creating a tight seal on the bellows. After years of further deterioration, it was finally replaced with new leather by Juget-Sinclair Organbuilders in 2014. This change required further modifications to the bellows to counteract the tighter seal of the leather and as a result caused

²⁶ Louder interview, October 13, 2015.

²⁷ Grew interview, October 22, 2015.

²⁸ This problem was thoroughly researched and confirmed in studies commissioned by the Organ Historical Society: See Harley V. Piltingsrud & J. Tancous, *Aging of Organ Leather* (Virginia: Organ Historical Society, 1987, 1994) and Harley V. Piltingsrud, *The Aging of Organ Leather and Related Topics*, DVD (Canton: American Institute of Organbuilders, 2002).

the *tremblant fort*, the more vigorous of the two tremulants, to work less effectively than originally intended. It presently has very little effect on the wind and beats at a slower rate than a typical *tremblant fort*. In addition to the work on the bellows, Juget-Sinclair also regulated the manual key action on the *Grand Orgue* and *Positif* in 2013 and altered the weighting of the keys to provide more subtle control over the articulation.²⁹

The Organ's Current State

Since Hellmuth Wolff's death in 2013, the organ has been maintained by Juget-Sinclair Organbuilders of Montreal. Regular tunings, which are performed weekly during the Noon-hour Recital Series and before most major concerts, are carried out by McGill's organ technician Alexander Ross who is also an employee at Juget-Sinclair. Recent problems with the air circulation system in the hall have created new challenges for the organ, as the tuning is often affected during the winter when the lack of air circulation causes the temperature at the top of the organ case to be as much as 10 degrees Celsius higher than at the level of the *Positif*, causing tuning problems between the divisions. Major work on the circulation system is planned to be completed in 2019 and should resolve this problem.

In 2014, the future use of the organ and the hall was brought into question by a proposal set forward by the McGill Library to repatriate the hall as a reading room. After protest by the faculty and students of the School of Music as well as the broader Montreal arts community, the Library abandoned its initial proposal. The library's current plan, outlined in their feasibility study *Fiat Lux* (2015), states that Redpath Hall "will continue to play an integral role as a stunning performance space in the reimagined Library...Redpath Hall would be returned to its former glory with a light restoration of the interior and the uncovering of the stunning façade currently obscured by the Redpath Library Building."³⁰

²⁹ This alteration was made at the request of Hans-Ola Ericsson, appointed Professor of Organ and Church Music at McGill in 2011.

³⁰ McGill Library, "FAQ" <https://www.mcgill.ca/library/about/fiat-lux/faq> (Accessed April 18, 2017).

III. THE ORGAN MUSIC OF BENGT HAMBRAEUS

Early Influences

It would be difficult to begin a discussion on the *Livre d'orgue* without first providing a background on the formation of Bengt Hambraeus' compositional style for the organ. Bengt Hambraeus' first encounter with the organ was at the Oscar's Church in Stockholm in 1933 when at the age of 5 he was taken up to the gallery to see the church's Åkerman & Lund organ built in 1903. According to Werner Jacob, this encounter had a profound impact on his later interest in organs and organ music.³¹ The organist Alf Linder would also have an important influence on Hambraeus as a young man; at the age of 15 in 1943, Hambraeus attended a series of concerts by Linder that included the complete organ works of J. S. Bach.³² He would go on to serve as Linder's assistant until 1947, registering for Linder's weekly concerts and occasionally replacing him for services and concerts. From Linder, he learned about the emerging trends in German theory and aesthetics (Linder himself having been a student of Fritz Heitmann in Berlin and Günter Ramin in Leipzig). Linder's pedagogical background and interest in the music of Max Reger also had an influence on the young Hambraeus whose first composition for the organ, a Chorale Partita on *In dich hab'ich gehoffet, Herr* (1946), displays a strong affinity to the styles of Bach, Reger, and Hindemith.³³ Linder also introduced Hambraeus to the German organ theorist Ernst Karl Rössler whose theories on sound

³¹ Werner Jacob, "The Contributions of Bengt Hambraeus to the Development of a New Organ Music," *Studies in Music* 3 (London, ON: University of Western Ontario, 1978), 23.

³² W. Jacob (1978) states these concerts as having taken place in 1943, however in Hambraeus' own article on the Oscars Church in *The Organ as a Mirror of its Time* (Kerala Snyder, ed., Oxford: Oxford University Press, 2002) he gives the year as 1944.

³³ W. Jacob (1978), 24.

and organ registration, mainly what he refers to as *Raumlinienstärke* and *Harmoniestärke*, would greatly influence Hambraeus' treatment of organ registration in his future works.³⁴

In 1951, Hambraeus expanded his knowledge of contemporary music by attending the Darmstadt summer courses, returning each summer for the next four years. There he met a new generation of progressive composers that included Luigi Nono, Karlheinz Stockhausen, Camillo Togni, Pierre Boulez and Karel Goeyvaerts among others. He would also benefit from courses with Olivier Messiaen who was the principal composition teacher in 1952–1953. It was also in Darmstadt that he discovered the music of Anton Webern, a composer who was nearly unknown in Sweden at that time.³⁵ This new inspiration from Darmstadt is evident in his only completed organ work from this time, *Permutations and Hymn (Nocte surgentes)* (1953), which shows similarities to the “interversion” techniques employed by Messiaen and discussed by him in his 1952 summer class.³⁶ There are no other organ works completed during this time save for two sketches, *Étude pour orgue* (1952) and *Composizione per organo* (1953), that show an increasing tendency to explore new sound combinations by means of unconventional register combinations including gap registration such as “16' + 2'” and colourful combinations of mutation stops.³⁷ His use of these new techniques can be partially attributed to the colourful registrations of Messiaen's organ works, however more importantly, the earlier influence of Rössler's registration models likely play a significant factor in this experimentation. Another innovation, the sustained manual cluster that opens the *Étude pour orgue*, would become a material of great importance in his future pieces.³⁸

The organs of the time also played an important role in Hambraeus' compositional development. In 1949, the ailing Åkerman & Lund organ in the Oscar's church was replaced by a new four-manual organ by the Danish firm Marcussen & Søn that was heavily influenced by the

³⁴ Rössler's theory, outlined in *Klangfunktion und Registrierung* (Kassel: Bärenreiter Verlag, 1952), categorized organ stops or combinations of stops as those best suited for counterpoint (*Raumlinienstärke*) versus those suited for harmonic passages (*Harmoniestärke*). Hambraeus' *Constellations* (1958) makes extensive use of Rössler's registrations and Hambraeus' dissertation, *Codex Carminum Gallicorum: une étude sur le volume Musique vocale du manuscrit 87 de la bibliothèque de l'université d'Uppsala*, (Uppsala: Uppsala University, 1961) applies the definition of *Raumlinienstärke* in a historical context. Rössler's theories on pipe making and registration would also inspire Hambraeus' first electro-acoustic piece, *Doppelrohr 2'* (1955) which is based on acoustical analysis of one of Rössler's organ pipes.

³⁵ Hambraeus would publish the first essay in the Swedish language on Webern in 1952. W. Jacob (1978), 24.

³⁶ Martin Herchenröder, “From Darmstadt to Stockholm: Tracing the Swedish Contribution to the Development of a New Organ Style,” in Snyder (2002), 307–8.

³⁷ Ibid, 309.

³⁸ Herchenröder also sees this gesture as an original application of Schoenberg's idea of *Klangfarbenmelodie* because the various registers are added and subtracted in a determined, semi-serialist way. Ibid, 310.

principles of the organ reform which had been growing in popularity in northern Europe since the early 1920's. Hambraeus was deeply critical of the organ reform's practice of cutting organs "into pieces"³⁹ and saw the reformers as differentiating too much between the "historical," meaning "dead," and the "modern," meaning "alive."⁴⁰ For Hambraeus, this was not a dichotomy; he didn't see a problem in incorporating modern theories like Rössler's with historical performance practice.⁴¹ Nevertheless, the instruments of the organ reform played an important role in Hambraeus' stylistic development. Of particular significance was the 1937 organ by Marcussen & Søn in the Gothenburg Concert Hall. Primarily grounded in the sonic world of the late Cavaillé-Coll aesthetic, it already shows a great deal of influence from the organ reform practices with a vast diversity of mutations, mixtures, reeds and labials from the 32' to the 1' spectrum. Over a period of six years from 1952 to 1958, Hambraeus spent a number of sessions experimenting and improvising on this organ, exploring its tonal possibilities and developing the foundations for what he called a "new organ style and repertoire."⁴²

The "New Organ Style"

His experiments would culminate in his landmark piece *Constellations* finished in 1958. This multi-section composition was derived from sketches that Hambraeus used in a recorded improvisation session at the Gothenburg organ in October 1958. The work is laid out in four numbered sections that explore unconventional combinations of mutations, high mixtures, and various reeds and labials (the piece is dedicated to Rössler and utilizes his registration theories). There are also aspects of pointillism and *Klangfarbenmelodie* and an unusual use of double pedal in parallel tritones with fast tremolo passage work. The registration and dynamic indications take advantage of the vast array of mutation stops and multiple enclosed divisions of the Gothenburg organ. Werner Jacob notes a particularly unusual registration combination of *Nasat* 5⅓', *Tierce* 1⅓',

³⁹ Bengt Hambraeus, "Orgelkris en gång till," *Musikrevy* 12/3 (1957), 82.

⁴⁰ This is a summary of a quote from Göran Blomberg, "Liten och gammal – Duger ingenting till": Studier kring svensk orgelrörelse och det äldre svenska orgelbeståndet ca 1930 – 1980/83", Ph.D. diss. (Uppsala: Swedish Science Press, 1986), 249. Translated by Per Broman: "The *a priori* view that there is a dichotomy between 'historical' which equals 'museum-like' which equals 'dead' on the one hand, and 'modern' which equals 'alive' on the other, is a founding part of the Organ Reform Movement's view on historical organs."

⁴¹ A more detailed study on Hambraeus' views on the organ reform is found in Per F. Broman, "*Back to the Future:*" *Towards an Aesthetic Theory of Bengt Hambraeus* (Landskrona: Parajett AB, 1999), 10.

⁴² Bengt Hambraeus, *Aspects of Twentieth Century Performance Practice: Memories and Reflections* (Stockholm: Royal Academy of Music, 1997), 121.

Septima 1½', and *Sifflöte* 1' made entirely of partials with no fundamental producing the illusion of an inaudible "synthetic fundamental."⁴³

In 1959, Hambraeus expanded the composition while working in the Studio di Fonologia Musicale in Milan. He used material from his recording of the piece made in Gothenburg to create a two-channel tape composition that he entitled *Constellations II*. In the same year, he was commissioned to write a work for the large Marcussen organ in the Danish Radio Building in Copenhagen (in size and vintage, a *de facto* sister organ of the Gothenburg Concert Hall). The work was conceived as an organ and tape piece, combining the tape material from *Constellations II* with new material performed live on the Copenhagen organ. The result was *Constellations III* which Hambraeus himself premiered in the fall of 1961.

Hambraeus' development of the "new organ style" culminated in 1961 with an invitation from Hans Otte, the head of the contemporary music department of Radio Bremen. He asked Hambraeus and the Hungarian composer György Ligeti to write new organ works for the Radio Bremen series *pro musica nova* which were to be performed in the Bremen Cathedral. Ligeti had become familiar with Hambraeus' work having attended the premier of *Constellations I* in Darmstadt in 1959 (the performance was actually the taped recording of Hambraeus' Gothenburg recording). The two worked together in the following months, collaborating on ideas of exploring possibilities for the Radio Bremen concert. The result was Hambraeus' *Interferenzen* and Ligeti's *Volumina* both of which make extensive use of the techniques explored by Hambraeus in *Constellations I* as well as a new approach to graphic notation, a concept that Hambraeus would continue to explore in future organ works. The premier of both works by the organist Karl-Erik Welin, although mired by an intriguing story of cancellation and controversy, marked the beginning of a new era in

⁴³ W. Jacob (1978), 27.

contemporary organ music.⁴⁴ Herchenröder points out several reasons for this: the music was preserved on tape and broadcast around Europe to an enormous audience; and since the premiers were also accompanied by a scandal, it fed the narrative that this new organ style was a source of great intrigue and controversy.⁴⁵

Time Capsules

The success of the Radio Bremen concert did not immediately produce further solo organ music and Hambræus went on to concentrate on other genres including orchestral works *Rota* (1962) and *Transfiguration* (1962–63). There is also the *Responsorier* (1964) for tenor soloist, two organs, choir and church bells that was commissioned for the 800th anniversary of Uppsala Cathedral. When Hambræus returned to organ music with *Tre pezzi per organo – Movimenti, Monodia, Shogaku* in 1966 and 1967, it shows a trend towards what might be termed “project pieces” intended to explore a specific style, purpose, or so-called “time capsule.” *Shogaku*, meaning “mouth organ music,” takes inspiration from traditional East-Asian ritual music. Here the time capsule is related to “a tradition that that has developed according to its own premises.”⁴⁶ Further examples of these “time capsule” projects are the *Five Organ Pieces* (1969–75). These five works are vastly different from one another, each representing a certain tradition or style. It is possible to divide the pieces into those which primarily represent a “closed” or specific tradition of performance practice: *Nebulosa* (1969), *Toccata – Monumentum per Max Reger* (1973), and *Extempore* (1975); and those which represent a specific organ tradition or type of organ: *Ricerca* (1974), and *Icons* (1974–75).

⁴⁴ Martin Herchenröder’s account of the events surrounding the Radio Bremen concert:

“The broadcasting station had planned, together with the Protestant community, for the concert to take place in Bremen Cathedral. A few days before the agreed-upon date, the church authorities, anxious that the music might create a scandal in the cathedral, vetoed the concert. As the Bremen broadcasting station did not come up with another suitable venue, the pieces had to be recorded on tape in order to be presented in a room of the broadcasting house, and Hambræus, who was working as a producer for the Swedish Broadcasting Corporation, arranged a recording session in the Göteborg Concert Hall. But when Welin tried to play the tremendous beginning of *Volumina* – a *fff* cluster covering the whole manual and some pedal keys – on the Marcussen organ, some vital fuses blew and the organ was rendered completely unusable; the recording project had to be transferred to Stockholm, where it was realized in two churches, St. John and Gustav Vasa. The rumor that the piece had ‘burned down’ the Göteborg organ, kindled further by Ligeti’s ironic comments in the introduction to his composition during the concert, made the new pieces famous overnight: the avant-garde had made the organs burn.”

Martin Herchenröder, “From Darmstadt to Stockholm: Tracing the Swedish Contribution to the Development of a New Organ Style,” Kerala J. Snyder, ed., *The organ as a mirror of its time* (Oxford: Oxford University Press, 2002), 314–315.

⁴⁵ Herchenröder in Snyder (2002), 315.

⁴⁶ Broman (1999), 204.

Nebulosa was written for the students of a summer organ course in Falkenburg, Sweden which was presented by Hambraeus in 1969. The piece is in the form of a rondo with material for a recurring improvised A-section interspersed with various composed material. Hambraeus wrote about the piece:

“I composed my ‘Cloud of Stars,’ my *Nebulosa*, not for that kind of [virtuosic] performer who plays without listening or even without understanding what he is doing, but for those organists and listeners who really want to explore new dimensions and want to listen behind the notes.”⁴⁷

Nebulosa can be seen to represent Hambraeus’ notion that the “new organ art” is, in itself, a time capsule that must be opened and explored by the performer. It introduces concepts that can then also be emulated or expanded on in the improvised sections. He also limited the performer by denoting the duration to be used (12 minutes) and by giving detailed instructions on how to proceed with the material given in the improvised sections.

Hambraeus’ notion that historical traditions are as alive as current music practices is evident in the works that make extensive use of quotation and reference to performance practice. The *Toccata – Monumentum per Max Reger* and *Extempore* both make use of material from other composers, but seen through the “medium and the prism” of Hambraeus.⁴⁸ His representation of Reger’s time capsule demonstrates how close Reger’s chromatic harmonies come to contemporary technique. By representing Reger’s aesthetic in the context of a modern idiom, he also challenges the prevalent viewpoint of the organ reform movement that the “historical” equals “dead.”

Extempore expands the realm of Hambraeus’ use of quotation to include a wider historical range with the quotations presented in a graphic score surrounded by detailed depictions of Hambraeus’ own material. The decisions concerning which material to use or how long the piece should be are left to the discretion of the performer. The performer is even instructed to leave out fragments to which they do not relate or to which the instrument may not be suited. In many ways, this work is more a turning kaleidoscope than it is a historical collage.

In *Ricercare*, Hambraeus returns to his roots in the Oscar’s Church in Stockholm and the Marcussen organ. The layout of the piece (5 sets of staves for the 4 manuals and pedal) and all of the

⁴⁷ From program notes by Hambraeus for Werner Jacob’s German premiere of *Nebulosa* in Stuttgart on September 27, 1969. Quoted from W. Jacob (1978), 30.

⁴⁸ W. Jacob (1978), 31.

registration indications are specific to the design of the Marcussen organ. Hambraeus regards the indications as an “instrumentation/orchestration” which should be “followed as closely as possible even if the work is performed on another kind of organ, where necessary modifications must be made.”⁴⁹ In his preface, Hambraeus cites Wili Apel’s definition of the *Ricercare*, “To exploit the idiomatic resources of...various instruments,” and adds that “‘*Ricercare*’ represents [a] study in sonorities and dynamics.” The direct references to the Oscar’s Church organ and the specific registration indications also invoke the idea of the instrument itself as the time capsule that needs to be opened and grasped by the performer.

In the same vein, *Icons* represents an equivalent study of one of the great North American romantic organs. The 1915 organ at Saint Paul’s Anglican Church in Toronto by Casavant Frères, with its 112 stops over 7 divisions represents an entirely different tradition from the organ reform movement. Once again, Hambraeus’ preface indicates his intentions to keep the indicated sound structure as close to the original as possible. His only departure from this strict instruction is the inclusion of an alternative registration for the percussion sounds of the Chimes, Harp, and Celesta, for which he provides the combination of *Rankett* 16’, *Blockflöte* 2’, *Scharff* and optional *Krumhorn* 8’. His main concern was likely to preserve the surround-sound design of the organ that resides in two opposing chambers at the front of the church and an antiphonal organ at the back.

Hambraeus continued his representation of time capsules in *Continuo – a partire da Pachelbel* for orchestra and organ, written in 1975 for a performance by Werner Jacob and the Southwest German Broadcast Orchestra in the Sebalduskirche in Nuremberg, where Pachelbel had once been organist. The work is as much a representation of Pachelbel with many musical quotations as it is an *hommage* to the church building, itself mostly destroyed in the Second World War. Jacob noted that Hambraeus used a quotation of Pachelbel’s *Aria Sebaldina* to symbolize how “a rose may eventually grow from the ashes: the fast-running, ghostly string, flute and organ parts may, following this suggestion, represent the dry, whirling remainders of a destroyed building.”⁵⁰ Hambraeus revisited this notion of representing a physical place and instrument in his 1993 commission for the dedication of the reconstructed organ by Arp Schnitger in the Jakobikirche in Hamburg entitled *Organum Sancti Jacobi*. As with the Sebalduskirche, the church and organ case were destroyed during the war, but the original pipework was rescued and preserved.

⁴⁹ Bengt Hambraeus, *Ricercare* (Stockholm: Edition Wilhelm Hansen, 1979), 2.

⁵⁰ W. Jacob (1978), 33.

It is within this notion of the time capsule and the concept of the “historic” as “alive” that the *Livre d’orgue* (1981) resides. Hambraeus noted in his preface that it was not his intention “to compose a pastiche in the style of the 17th century (on only one occasion is there a clear homage, to a 16th century chanson composer).”⁵¹ Instead, he writes: “I have used the ‘historic’ nomenclature because it gives a general indication for instrumentation/registration rather than for a certain style.”⁵² As with his other projects, *Livre d’orgue* gives the impression that the performer and listener are seeing the time capsule through the kaleidoscopic lens of Hambraeus.

Commissioning and Composition of *Livre d’orgue*

Bengt Hambraeus was appointed professor of composition at McGill in 1972 after spending two months touring Canada and the United States lecturing on Swedish contemporary music. He was already a well-established composer in Europe and had been head of production of the Swedish Broadcasting Corporation since 1964. Upon arrival, he joined those teaching at McGill’s Electronic Music Studio, founded in 1964, and also lectured in 20th century performance practice. Hambraeus was also active as a performer on organ at this time, one of his notable concerts being a performance of Bach’s *Kunst der Fuge* in 1972 on the Beckerath organ at the Church of the Immaculate Conception in Montreal. Hambraeus was not initially involved in the planning process for the building of the new organ at McGill, however as the project developed, John Grew approached Hambraeus with the idea of composing a set of pieces for the new organ.⁵³ Grew suggested that Hambraeus model his pieces after the French *livre d’orgue* tradition since there was a great deal of excitement at the time over the discovery in 1978 by Élisabeth Gallat-Morin of a previously unknown collection of organ music brought to Montreal in 1724 for use in the liturgies at Notre-Dame de Montréal.⁵⁴ Hambraeus agreed to complete the commission during his sabbatical year (1980–81) with the intention that John Grew premiere a selection of the pieces during the symposium and inauguration for the new organ in May 1981.

Hambraeus composed over the course of five months from November 1980 to April 1981. He provides a date of composition at the end of nearly all of the pieces, so it is possible to determine

⁵¹ Hambraeus, “Preface,” *Livre d’orgue* (St. Hyacinthe: Les éditions Jacques Ostiguy, 1981).

⁵² Ibid.

⁵³ Grew interview, 22 October 2015.

⁵⁴ This collection was published under the title of the *Livre d’orgue de Montréal* in three Volumes, Élisabeth Gallat-Morin & Kenneth Gilbert, ed., St. Hyacinthe (Quebec): Les éditions Jacques Ostiguy, 1985, 1987, 1988.

the order in which the volumes developed.⁵⁵ Most of the fourth volume was completed first (the first piece written, *Ouverture sur les Grands-Jeux*, was completed on November 1, 1980). Volume 1 was the last section to be completed and was written between March 23 and April 2, 1981 after the completion of the other three volumes. Although all of the compositions were written before the organ was finished, Hambraeus visited Redpath Hall a number of times between the fall of 1980 and the inauguration in May 1981, so it is likely that he would have been able to envision and even perhaps hear some of the pipework as it was being installed and voiced.⁵⁶ James Louder confirmed that the organ was in a mostly playable state by March 1981 (albeit only partially voiced), so it is possible that Hambraeus could have been revising his written registrations as late as this stage.⁵⁷ However, John Grew believes that the registrations were conceived away from the organ. According to his recollections, Hambraeus did not do any significant testing of the organ prior to the completion of the pieces.⁵⁸ The only way to confirm this would be to locate his original copy of the compositions to compare the registrations, however the existence or whereabouts of such a document is not known.⁵⁹

The preface to the work was written by Hambraeus in April 1981 and was included at the beginning of each of the four volumes published on May 1, 1981 by the Éditions Jacques Ostiguy of Saint Hyacinthe, Quebec. The publication was not typeset, being rather a facsimile of Hambraeus' own hand-written scores which undoubtedly accounts for the very quick turnaround from the completion of the last piece on April 2, 1981 to the first printing of the publication on May 1, 1981. It is unclear if the handwritten drafts were completed on the same date as those listed for each piece, or if these versions were copied from previously completed drafts.

Structure and Characteristics of *Livre d'orgue*

Hambraeus arranged his work in four self-contained suites, each with twelve individual pieces. The suites are grouped together according to level of difficulty, advancing to the most difficult pieces in volume IV. He treats the suites like an *ordre* in the French suite sense, each with an *Introduction* and

⁵⁵ A complete list of dates for the pieces in chronological order is included in the Appendix (pp. 66–67).

⁵⁶ Louder interview, October 13, 2015.

⁵⁷ Ibid.

⁵⁸ Grew cites changes that Hambraeus made to the *Ronde des tierces en couple* (vol. 3) while attending the recording session for John Grew's LP released in 1986 as an example of a revision made after the completion of the organ (Grew interview, October 22, 2015).

⁵⁹ There is no known manuscript for the *Livre d'orgue*, however Hambraeus' personal copy of the published score is preserved in his collection at Library and Archives Canada.

Finale, and he suggests that the performer need not perform all of the pieces in a suite but rather “select what is needed for a certain occasion.”⁶⁰ The pieces fall into two categories: those with titles names in the tradition of the 18th century *livres d’orgue* (*Grand-Jeu*, *Récit de Tierce en Taille*, etc.) and those that “represent other tendencies”⁶¹ (*Stratification*, *Alternance*, etc.). All of these pieces include detailed registration instructions specific to the Redpath Hall organ; the traditionally-titled pieces typically reflect the exact instructions from Dom Bédos according to the stop list at Redpath, while the other pieces reflect a more experimental take on French classical registrations.

The *Introduction* and *Finale* from each suite are based upon either the classical *plein jeu* or *grand jeu* registrations. Each of the volumes 2, 3, and 4 also contain a *Basse de Cromorne*, a *Basse de dessus de Trompette*, and a *Récit de Tierce en taille* which become progressively more difficult in each successive suite. The registration and general layout (staff distribution, manual indications) of the traditionally-titled pieces reflects Dom Bédos’ registration practice. There are also pieces in the suites which serve as progressive studies in specific techniques. For example, the preface notes that the *Perspectives du Mi en quatuor* from volume 1 and *Répercussions* from volume 3 represent progressive studies in “rapid vertical changes between two or three keyboards” that culminate in the *Duo (canone al rovescio)* from volume 4.⁶² The pedagogical aspects of the pieces is also seen in the introduction of contemporary compositional techniques such as the cluster chords in *Champs* from volume 1 and the partially drawn stops (or stops pulled on or pushed in slowly) as seen in *Les timbres irisés* from volume 3.

The compositional materials in the *Livre d’orgue* are as complex as the questions that concern registration. Hambraeus makes extensive use of techniques and material from his own compositional language that not only draws upon other music such as his use of the “spiral chord” first heard in *Déserts* by Edgar Varèse (and found in *Terme sur les Grands-Jeux*, volume I, final chord, and *Ouverture sur les Grands-Jeux*, volume IV, measure 7), but also points to thematic material between movements in the *Livre d’orgue* such as the parallel motivic material used throughout the *grand jeu*

⁶⁰ Hambraeus, “Preface,” *Livre d’orgue* (1981).

⁶¹ Ibid.

⁶² Ibid. This however seems slightly counterintuitive, since the *Duo* does not have any manual changes like the other pieces which move rapidly between all three keyboards. The challenge in the *Duo* is perhaps more to do with the fast-moving leaps between large intervals in both hands.

and *plein jeu* movements. These relationships as well as a thorough analysis of the compositional processes in the *Livre d'orgue* are discussed in the D.M.A. thesis by Laurain Olsen-Waters.⁶³

Notable Performances and Recordings

The first performance of excerpts from the *Livre d'orgue* were given by John Grew for the 1981 symposium and inauguration of the Redpath Hall organ. The program, which took place on May 26 included *Choral* from volume 1, *Ronde de Tierces en couple* from volume 3, and *Récit de Nazard* from volume 4 alongside works by Marchand, Lebègue, d'Anglebert and Dandrieu. John Grew also performed the *Récit de Nazard* during the inaugural recital for the reopening of Redpath Hall on September 23, 1982. During this event, Bengt Hambraeus formally presented the *Livre d'orgue* to Dean Paul Pedersen of the Faculty of Music. It is curious to note that in the programs for these events, the work is referred to as the *Livre d'orgue de McGill*, which differs from the name given in the publication (it is simply titled *Livre d'orgue*). The addition of “*de McGill*” has been a common colloquialism used by organists associated with McGill, however its origins are unknown since Hambraeus himself never refer to it in this way in any of his writings.

There have been very few complete performances of entire volumes of the *Livre d'orgue*. Scott Bradford made the first complete performance of volume 4 for the completion of his Master's degree in 1983. Chelsea Barton also recently performed volume 4 in its entirety in March 2017 during the Redpath Hall Noon-hour Recital Series. Notable recordings include the complete volume 3 by John Grew in Redpath Hall in 1986 (McGill University Records) and the complete volume 4 recording by Hans Hellsten at the Maria Magdalena Church in Stockholm from 1992 (Prophone Records).

⁶³ Laraine Olson-Waters, “Bengt Hambraeus's *Livre d'Orgue*: An exploration of the French Classic Tradition and Beyond,” D.M.A. Dissertation, John Hopkins University, 1995.

IV. INTERPRETING FRENCH CLASSICAL ORGAN REGISTRATIONS FROM DOM BÉDOS AND OTHER SOURCES

French Organ Registration Sources (1665–1770)

The period between the death of Jean Titelouze (1633) and the publication of Guillaume-Gabriel Niver's *Premier Livre d'orgue* (1665) saw a gradual shift in French organ music from a primarily contrapuntal genre to a new style of melody-based writing associated with lute and harpsichord music. Raquette's duets for organ from the early 1600's and Louis Couperin's dance-based works from the 1650's represent the adoption of this new style, while the primarily contrapuntal style continues to appear as late as 1660 with Roberday's *Fugues et caprices*. The colourful French registration practice that began to flourish in this period has its roots in the organ-building practices of the 15th and 16th centuries, however its codification in the seventeenth and eighteenth centuries can be linked to the *livre d'orgue* publications and their detailed registration instructions. The developing registration practice and the new organ style are intimately linked. As Fenner Douglass notes, the essence of the French classical style of registration lies in "the close interrelationships among registration, musical texture, and expression."⁶⁴

There are two different types of registration sources from this period: the prefaces from the *livres d'orgue*, and the theoretical treatises, both of which give instructions on interpreting the various genres and their associated registrations. The classical period is generally considered to begin with the publication of Niver's *Premier Livre d'orgue* and reaches its culmination with Dom Bédos de Celles' *L'art du facteur d'orgue* (1766, 1770, and 1778). In all, there are thirteen principal sources for organ registrations from this period. They are listed here as a reference:

Guillaume-Gabriel Nivers, Preface to *Premier Livre d'orgue*, 1665

Nicolas Lebègue, Preface to *Premier Livre d'orgue*, 1676

Anonymous text from *Second Livre d'orgue* of Lebègue, 1678

⁶⁴ Fenner Douglas, *The Language of the Classical French Organ* (New Haven: Yale University Press, 1969, 1995): 104.

Nicolas Gigault, Preface to *Livre de musique pour l'orgue*, 1685
 André Raison, Preface to *Livre d'orgue*, 1688
 Jacques Boyvin, Preface to *Livre d'orgue*, 1689
 Gilles Juillien, Preface to *Livre d'orgue*, 1690
 Lambert Chaumont, Preface to *Livre d'orgue*, 1695
 Gaspard Corrette, Preface to *Messe du 8^e ton*, 1703
 Anonymous text, "Anonyme de Tours," ca. 1710–1720
 Dom Bedos de Celles, *L'art du facteur d'orgues*, volume 3, 1770

The majority of the sources date from the late 17th and early 18th centuries. During this time, a gradual shift in aesthetics occurred in the French organ literature and continued into the post-revolution period. By the second half of the 18th century when Dom Bédos is writing, the style has already changed significantly from the practices of Nivers and Lebègue.

Dom Bédos' *L'art du facteur d'orgue* (1766, 1770, and 1778)

The Benedictine monk and organ-builder Dom Bédos de Celles published the first of four volumes of his monumental compendium of the French organ-building style in 1766 followed by two additional volumes in 1770 (a fourth volume on chamber organs would be published in 1778). The fourth chapter of the third volume, entitled "*Les principaux mélanges ordinaire des Jeux de l'Orgue; Lus, examines, corrigés & approuvés par les plus habiles & plus célèbres organistes de Paris, tel que Messieurs Calviere, Couperin, Balbastre, & autres*,"⁶⁵ provides instructions for registering all of the common organ pieces as well as describing the characteristic playing styles for each genre. It differs from the other primary registration sources in its breadth (it is more extensive than any of the other publications), and also in its date of publication, coming many years after the height of the classical period. Dom Bédos recognizes this stylistic culmination, as well as his attempt to give the most current advice, stating that:

*Le gout étant change depuis ce temps-là, à cause des différents usages qu'on fait des Jeux, & la façon de les traiter, il a été nécessaire de faire des changements dans leur mélange. Ceux que je donne ici sont du moins généralement pratiqués à présent par le plus grand nombre & les meilleur Organistes.*⁶⁶

⁶⁵ "The principal combinations of organ registers, read, examined, corrected and approved by the most skillful and celebrated organists of Paris, such as Messieurs Calviere, Couperin, Balbastre, and others." Dom F. Bédos de Celles, *L'art du facteur d'orgue*, 1766–1778, facsimile (Kassel: Bärenreiter, 1963–65), 523.

⁶⁶ "Tastes have changed since that time. Because of different uses of stops and ways of treating them, certain alterations in those earlier combinations have been necessitated. Given here are those at least generally in use by the large majority of the best organists today." Ibid. Translation by Fenner Douglass, from "Should Dom Bédos Play Lebègue?" *Organ Yearbook* 4 (1973): 101–11.

This helps to put Dom Bédos in perspective with the century of organ music and registration practice that culminates in his writings. Acknowledging the progression of this “change of taste” is vital to understanding the various registration combinations.

Selected Historical Registrations

In order to give context to the discussions on Hambraeus’ registrations, I have included descriptions of some of the common historical registrations.

Plein jeu

The *plein jeu* in French organ registration comes from the combination of stops that make up the principal chorus of the organ. Almost completely consistent across all of the registration documentation from the 16th to the late 18th century, the *plein jeu* can be described as the combination of all of the narrow-scale principal ranks on both the *Grand Orgue* and the *Positif* (with the manuals coupled) along with the doubling of 16’ and 8’ wide-scale flutes. The *plein jeu* of a 16’ organ would therefore be composed of the following:⁶⁷

<i>GRAND ORGUE</i>	<i>POSITIF</i>
16’ <i>Montre</i>	8’ <i>Montre</i>
16’ <i>Bourdon</i>	8’ <i>Bourdon</i>
8’ <i>Montre</i>	4’ <i>Prestant</i>
8’ <i>Bourdon</i>	2’ <i>Doublette</i>
4’ <i>Prestant</i>	<i>Fourniture</i>
2’ <i>Doublette</i>	<i>Cymbale</i>
<i>Fourniture</i>	
<i>Cymbale</i>	

Organs without the *Montre* 16’ of the *Grand Orgue* and *Montre* 8’ of the *Positif* would consequently start at the lowest possible 16’ or 8’ combination (for example, if the *Grand Orgue* only had a *Bourdon* 16’ as is the case for the Redpath Hall organ, the *Bourdon* 16’ would be the lowest stop). However, the flute doublings were only observed at the 16’ or 8’ level and not at the 4’ or 2’ level. On the smallest organs, the combination would be simplified to whatever resources were available: for

⁶⁷ Chart reprinted from Douglass (1969, 1995), 73-74.

example, a small single-manual *plein jeu* might consist of only *Bourdon* 8', *Prestant* 4', *Doublette* 2', and *Cymbale*.

Jeu de tierce and Cornet

The wide-scale flutes of the French classical organs also combine in distinct choruses much like the *pleins jeux* of their narrow-scale principal counterparts. A defining characteristic of the wide scale flutes is the prevalence of mutation stops at the fifth (*Nazard*, *Gros Nazard*, and *Larigot*) and third (*Tierce* and *Grosse Tierce*). These combinations of flutes collectively form the *grand jeu de tierce* on the *Grand Orgue* and the *petit jeu de tierce* on the *Positif*. Although the combination of low and high fifths and thirds differed over the 17th and 18th century, the typical mid-classical disposition of the *jeux de tierce* consisted of the following:

<i>GRAND ORGUE</i>	<i>POSITIF</i>
16' <i>Bourdon</i>	8' <i>Bourdon</i>
8' <i>Bourdon</i>	4' <i>Flûte</i>
3½' <i>Grosse Tierce</i>	2½' <i>Nazard</i>
4' <i>Flûte</i>	2' <i>Quarte de Nazard</i>
2½' <i>Nazard</i>	1½' <i>Tierce</i>
2' <i>Quarte de Nazard</i>	1⅓' <i>Larigot</i>
1⅓' <i>Tierce</i>	

In addition, the larger organs later in the period such as the Dom Bédos organ in Bordeaux often included a *Gros Nazard* 5⅓' and even a *Bourdon* 32'. In his description “*Pour le Duo*” (a two-part piece for the *grand* and *petit jeux de tierce*), Dom Bédos advocates for the inclusion of all of these stops as well as the foundations (16', 8' and 4' principals):

On mettra au grand Orgue tous les Jeux de fond, même le 32 pieds, s'il y en a, comme au Plein-Jeu. On y ajoutera les deux Nasards, les deux Tierces et la Quarte, sans Doublette, à moins qu'il n'y eut pas de Quarte : c'est ce qu'on appelle le grand Jeu de Tierce.

*Au Positif on mettra le 8 pieds ouvert, le Bourdon de 8 pieds, le Prestant, le Nasard, le Quarte et la Tierce. S'il n'y a pas de Quarte, on mettra la Doublette : ce mélange s'appelle le Jeu de Tierce du Positif.*⁶⁸

The *Cornet*, a single stop of multiple ranks (usually 8', 4', 2⅔', 2', 1⅜') also represents this family of flutes, but is a single stop in the treble range of the keyboard (usually from C3 or G2 to D5).

Récits de dessus, basse, et en taille

The *récit* is a general term for a melodic texture with an accompaniment. They can be classified by those with a treble melody in the right hand with bass accompaniment in the left hand (*récit de dessus*), those with a bass melody in the left hand with treble accompaniment in the right hand (*récit de basse*), and those with a tenor melody in the left hand with treble accompaniment in the right hand and a bass line in the pedal (*récit en taille*). Common *récits de dessus* use the *Cornet*, the *jeu de tierce* or the reed stops for the melody and a *jeu doux* for the accompaniment. The various composers and authors give different possible stop combinations for the *jeu doux*, often varying the stops according to the strength of the solo voice. For example, Lebègue's most common suggestion for the *jeu doux* is the *Bourdon* 8' and *Prestant* 4' on the accompaniment manual, however he suggests alternatives such as replacing the *Positif Montre* 4' with a *Fluste* 4' for a *Voix humaine* solo presumably because the solo voice would not be strong enough to balance with the *Montre* 4'. Dom Bédos prefers that the *récits de dessus* are accompanied by the two 8's of the *Grand Orgue* (*Montre* 8' and *Bourdon* 8') "*pour en faire la basse*" (in order to produce full bass notes).⁶⁹ Following these instructions, a typical *récit* like a *Dessus de Cromorne* would have the following registration:

GRAND ORGUE : *Montre* 8', *Bourdon* 8'
POSITIF : *Cromorne* 8', *Prestant* 4'

A *Basse de Cromorne* would be the *récit de basse* equivalent of this registration and Dom Bédos gives a similar combination for the accompaniment with "*tous les 8 pieds*" (all the 8's).⁷⁰ This implies the

⁶⁸ "On the *Grand Orgue*, use all the foundation stops, even the 32', if there is one, as for the *plein jeu*. Add to this the two *Nasards*, two *Tierces* and *Quarte*, without *Doublette*, unless there is no *Quarte*. This is called the *grand jeu de tierce*. On the *Positif* use the open 8', *Bourdon* 8', *Prestant*, *Nasard*, *Quarte*, and *Tierce*. If there is no *Quarte*, use the *Doublette*. This combination is called the *jeu de tierce du Positif*." Bédos de Celles, 524; Translation from Douglass (1969, 1995), 220.

⁶⁹ Bédos de Celles, 530. Translation from Douglass (1969, 1995), 223.

⁷⁰ Ibid.

Montre 8' and *Bourdon* 8' as well as any other 8' flues, such as an additional *Flûte ouvert* or *Second Montre* as was more common in the later period.

The *recits en taille* are treated in a similar way. The solo voice is either played on a *petit jeu de tierce* or the *Cromorne* of the *Positif*. The *jeu doux* for the *recits en taille* often included the *Montre* 16' or *Bourdon* 16' of the *Grand Orgue* (presumably coupled to the *Pédale*) with the *Pédale Flûtes*, but it seems to fall out of fashion later in the period. Michel Corrette, writing in 1737, uses the 16' in the accompaniment of his *Cromorne en taille* but not for the *Tierce en taille*, and the accompaniment for Dom Bédos' *recits en taille* only uses 8' stops reserving the 16' for the pedal. His instructions for interpreting the *Tierce en taille* are as follows:

On mettra au grand Orgue pour l'accompagnement les deux 8 pieds, ou trois s'il y en a : au Positif, les deux 8 pieds, le Prestant, (ou encore mieux, la Flûte de 4 pieds, s'il y en a, au lieu du Prestant;) le Nasard, la Quarte, (ou au défaut de la Quarte, la Doublette) la Tierce & le Larigot. On mettra à la Pédale pour faire la Basse, tous les Jeux de fond de la Pédale, comme les 16 pieds, s'il y en a, les 8 pieds & les 4 pieds.⁷¹

On Dom Bédos' 1748 organ in Bordeaux, the *Récit de tierce en taille* would be interpreted as follows:

<i>GRAND ORGUE :</i>	<i>Montre 8', Second 8', Bourdon 8'</i>
<i>POSITIF :</i>	<i>Montre 8', Bourdon 8', Flûte 4', Nasard 2⅔', Doublette 2', Tierce 1⅓', Larigot 1⅓'</i>
<i>PÉDALIER :</i>	<i>Flûte 16', Flûte 8', Flûte 8', Flûte 4'</i>

Grand jeu

The *grand jeu* is the term for the combination of reed voices dominated by the *Trompette* (or *Trompettes*) of the *Grand Orgue*. The typical organ from the early 17th century usually had a *Trompette* 8', *Clairon* 4', and *Voix humaine* 8' on the *Grand Orgue*, a *Cromorne* 8' on the *Positif* and a *Trompette* 8' in the *Pédale*. This configuration remained mostly standard until the 18th century when larger batteries of reeds began to appear in all of the divisions, including the aptly-named *Bombarde* divisions, which in the case of the 1733 organ of Notre-Dame de Paris, contained a *Bombarde* 16',

⁷¹ "For the accompaniment use the *Grand Orgue*, both 8's, or three if there are that many. On the *Positif*, both 8's, *Prestant* (or better yet the *Flûte* 4', if there is one, in place of the *Prestant*), the *Nasard*, *Quarte* (or, in the absence of a *Quarte*, the *Doublette*), the *Tierce*, and *Larigot*. For the bass in the pedal, use all the foundation stops, including 16' if there is one, as well as the 8's and 4's." Bédos de Celles, 526. Translation from Douglass (1969, 1995), 222.

two *Trompettes* 8' and a *Clairon* 4', however, the basic registration remained the same. The *grand jeu* was composed of the *Trompette* and *Clairon* with the *Cornet* added for emphasis in the treble register. The foundation stops would also be added to double the reeds at the 8' and 4' levels and also sometimes in the upper registers (*Nazard*, *Doublette* and *Tierce*). The *Cromorne* with similar combinations of foundations and mutations dominated the *petit jeu* of the *Positif*. One important distinction with all of the *grand jeu* combinations from the sources is that they contain no mixtures; the mixtures were reserved for the *plein jeu* and were not considered interchangeable in other combinations. In addition, it should be noted that there is a tendency in many of the sources to add the *tremblant fort* to the *grand jeu*. However, Dom Bedos condemns the practice: "*Il est remarquable que ce ne sont jamais les plus habiles, & qui ont le plus de goût ; ceux-ci sentent trop bien que cette modification du vent barbouille & gâte la belle harmonie.*"⁷² A few source examples illustrate some of the various *grands jeux* registrations over the course of the 17th and 18th century:

Premier Livre d'orgue: Nicolas Lebègue (1676)⁷³

GRAND ORGUE: Bourdon 8', Prestant 4', Trompette 8', Cornet
POSITIF: Bourdon 8', Prestant 4',⁷⁴ Cromorne 8'

Premier Livre d'orgue: Michel Corrette (1731)

GRAND ORGUE: (Bourdon 8'),⁷⁵ Prestant 4', *Nazard* 2 $\frac{2}{3}$ ', *Quart de Nazard* 2', *Tierce* 1 $\frac{3}{5}$ ', *Trompette* 8', *Clairon* 4', *Grand Cornet*
POSITIF: (Bourdon 8'), Prestant 4',⁷⁶ *Nazard* 2 $\frac{2}{3}$ ', *Tierce* 1 $\frac{3}{5}$ ',
Cromorne 8'
Tremblant à vent perdu

L'art du facteur d'orgues: Dom François Bedos de Celles (1766, 1770, and 1778)

GRAND ORGUE: Prestant 4', *Trompettes* 8', *Clairons* 4', *Grand Cornet*
POSITIF: Prestant 4', *Trompette* 8', *Cromorne* 8', (*Clairon* 4'),⁷⁷ *Cornet*
RÉCIT: *Cornet*
PÉDALE: *Trompettes* 8', *Clairons* 4'

⁷²"It is noteworthy that this is never done by the ablest and most tasteful players, who feel very correctly that the resulting modification of the wind soils and damages a beautiful effect." Bédos de Celles, 524. Translation from Douglass (1969, 1995), 220.

⁷³ Lebègue also gives a second example with added mutations as well as the *tremblant à vent perdu*.

⁷⁴ Listed as "*Montre*."

⁷⁵ "The *Bourdons* can be omitted" Translation from Douglass (1969, 1995), 217.

⁷⁶ Listed as "*Montre*".

⁷⁷ "If the *Grand Orgue* has but one *Trompette* and *Clairon*, [the *Clairon* of the *Positif*] would be omitted," Bédos de Celles, 524. Translation from Douglass (1969, 1995), 220.

V. REFINING THE ORGAN REGISTRATIONS IN *LIVRE D'ORGUE*

As an organist himself, Hambraeus was very thorough in his approach to organ registration. For a composer of organ music, it is always difficult to find the right balance between being too vague and too specific with registration indications, seeing as how the music most often is intended for performance on different organs that naturally will have very different specifications. In the case of the *Livre d'orgue*, the codified French classical registration practice lends itself well to very specific registration indications because the instructions for the Redpath Hall organ are easily understood within the context of other French classical organs with similar specifications across a broad range of instruments. That being said, the registrations in the *Livre d'orgue* can be divided into two categories: those which reference specific registers on the Redpath Hall organ and those which give only a general sense of the stops to use according to classical concepts. The latter, which includes the indications “*Plein-Jeu*,” “*Grand-Jeu*,” and “*pleine*,” require a knowledge of French registration practice in order to realise the registrations. Hambraeus’ reasons for including these general terms, instead of each of the specific stops which make up these combinations are likely twofold; firstly, these combinations have the most number of stops and it is therefore more efficient to write out only the general French classical term as a short hand; and secondly, the exact combination of these indications varies according to the taste of the performer and the limitations of the instrument. Much of my research concerns the possible combinations for these general indications in order to give a more refined solution to these combinations for the Redpath Hall organ.

The other principal part of my research has been to examine the specific registrations given by Hambraeus in the score in order to refine these sounds for the organ in its current state. As already mentioned, two main issues arise with Hambraeus’ specific registrations: firstly, he composed his registration indications before the instrument was complete and likely did not have the opportunity to test the sounds on the organ before the work was published, and secondly, that the organ has undergone some subtle but significant changes since it was initially built.

With these factors in mind, my research has focussed on testing out these registrations on the Redpath Hall organ, in some cases trying various alternative combinations, in order to work towards a better understanding of how the written indications work on a practical level. Using a variety of methods, such as recording excerpts to review, or employing an assistant to critique the sounds live in the hall, I have reached some conclusions on how to better refine Hambraeus' already very thorough registrations. The research involved three distinct phases; firstly, a comprehensive documentation of the timeline of the construction of the organ, the composition of the *Livre d'orgue*, and the changes to the organ over its lifespan; secondly, an analysis of the registration instructions in the music, and the testing of the combinations on the Redpath Hall organ as well as the Dom Bédos reference instrument in Bordeaux; and finally, the formation of a critical report to document the suggested revisions according to the collected data. This chapter, as well as the following chapter on my research trip to Bordeaux, document the second and third phases of the project. The critical report, which has been my open-ended document for tracking problems and solutions that arise in my work, outlines various proposed updates to the registrations as well as other errors and future editorial decisions.⁷⁸ I have chosen to highlight some examples from the critical report in further detail in this chapter.

The *plein jeu*

There are six *plein jeu*-inspired pieces in the *Livre d'orgue*, each which contain the general indication “*plein-jeu*” along with other specific registers Hambraeus intends for the piece, such as the added reeds in *Fugue sur les Pleins-Jeux, avec les anches* in volume 4, or the added *tremblant fort* in *Air profond* in volume 1. Dom Bédos describes his *plein jeu* as requiring “*toutes les Montres, tous les 8 pied ouverts, tous les Bourdons, tous les Prestants toutes les Doublettes toutes les Fournitures, toutes les Cymbales, tant au grand Orgue qu'au Positif & on mettra les Claviers ensemble.*”⁷⁹ In Redpath Hall, following the Dom Bédos instructions, the *plein jeu* is based on the *Bourdon* 16' of the *Grand Orgue* and the *Bourdon* 8' of the *Positif* (see FIGURE 5.1).

⁷⁸ The critical report is included as a separate document.

⁷⁹ “On the *Grand Orgue* and the *Positif* as well, draw all the *Montres*, all the open 8', the *Bourdons*, *Prestants*, *Doublettes*, *Fournitures* and *Cymbales*, and couple the keyboards.” Bédos de Celles, 523. Translation from Douglass (1969, 1995), 219.

FIGURE 5.1: *Plein jeu* registration for the Redpath Hall organ according to *L'art du facteur d'orgues*

GRAND ORGUE : Bourdon 16', Montre 8', Bourdon 8', Prestant 4', Doublette 2',
Fourniture, Cymbale
POSITIF : Bourdon 8', Dessus de Flûte 8', Prestant 4', Quarte de Nazard 2',
Fourniture, Cymbale
Positif to Grand Orgue coupler

Note the addition of the principal-scale *Dessus de Flûte* 8'. Dom Bédos is the singular historical source asking for “*tous les 8 pieds ouverts*” (all of the open 8's) in addition to the *Montres* and the *Bourdons*. In my experience, the addition of the *Dessus de Flûte* on the Redpath Hall organ for classical repertoire can sometimes have a detrimental effect as it takes away some of the lightness of the *Positif* sound. In the case of the sound world of Hambraeus however, I find that the *Dessus de Flûte* adds extra clarity and definition to the *Positif* when played alone, such as in the *Introduction sur les Pleins-Jeux* from volume 2 (see FIGURE 5.2).

FIGURE 5.2: Bengt Hambraeus, “Introduction sur les Pleins-Jeux,” *Livre d'orgue*, vol. 2, p. 14, mm. 12–14.



An additional consideration to take into account when realizing the *plein jeu* registration at the Redpath Hall organ is the effect of the combination on the wind stability. In my experience, I have noticed that large combinations like the *plein jeu* cause the wind to shake. This wind shake is common on historic organs and is part of what makes the sound interesting, but if the wind supply is stressed too much, then this shaking can detract from the performance. Removing wide-scale flutes from the combination tends to free up some of the wind and eliminates some of this instability. In the *plein jeu*, I found that removing the *Bourdon* 8' of the *Grand Orgue* was the most effective way

to control the excessive shaking.⁸⁰ In addition to this subtle change to the *plein jeu* combination, I experimented with the *plein vent* stop. The *plein vent* is a feature that Hellmuth Wolff added to the organ in order to subtly increase the amount of available wind and gives some stability to the wind. Combining this with the removal of the *Bourdon 8'* from the *Grand Orgue* results in a more stable sound that still retains some of the historical character of the unstable wind supply.

The *grand jeu*

Hambraeus' *grand jeu* registrations are generally similar to the *plein jeu* indications, leaving the interpretation of the specific stops to the performer. Dom Bédos' *grand jeu* was meant for the extensive battery of reeds associated with the large organs from the late classical period. He defines the *grand jeu* as requiring “*au grand Orgue le grand Cornet, le Prestant, toutes les Trompettes & les Clairons, s'il y en a plusieurs. On mettra également au Positif le Cornet, le Prestant, la Trompette, le Clairon & le Cromorne : (on retranchera ce dernier Jeu, s'il n'y a dans le grand Orgue qu'une Trompette & un Clairon.) On mettra les Claviers ensemble.*”⁸¹ The stop list of the Redpath Hall organ allows for a modest *grand jeu* lacking only the extra *Trompettes* and *Clairons* preferred by Dom Bédos. A strict interpretation of the *grand jeu* for the Redpath Hall organ would include the *Trompette*, *Clairon*, *Prestant* and *Cornet* on the *Grand Orgue* coupled with the *Cromorne* and *Prestant* of the *Positif*. This combination works quite effectively, but my testing at the Dom Bédos organ in Bordeaux found that the upper work, built for a cavernous acoustic, tends to be brighter and clearer than the upper work at Redpath Hall which is sweeter and rounder perhaps in order to fit with the smaller acoustic. In order to capture some of this clarity on the Redpath Hall organ, I added some upper work in the form of the *Nazards*, *Tierces* and 2's on both manuals (see FIGURE 5.3).

The *Nazard* and *Tierce* reinforce the *Cornet* and help the *Cromorne* to blend, particularly when playing on the *petit jeu* alone. The narrow-scale *Doublette* also adds extra clarity and punctuation to the sound.

⁸⁰ The line between what would be considered “normal” versus “excessive” wind shake is a subjective matter, however, my criteria for identifying excessive wind shake is if the shaking detracts from the overall melodic or harmonic material. Most historic organs with cuneiform bellows experience some level of wind instability which adds to the quality of sound from the pipes. With the Redpath Hall organ, since the wind shake is added artificially with springs to simulate the wind instability of historic organs, the point at which the effect appears to be exaggerated is apparent to a listener familiar with historical instruments.

⁸¹ “On the *Grand Orgue* use the *Grand Cornet*, *Prestant*, and all the *Trompettes* and *Clairons*, if there are several. Likewise on the *Positif*, draw the *Cornet*, *Prestant*, *Trompette*, *Clairon*, and *Cromorne* (if the *Grand Orgue* has but one *Trompette* and *Clairon*, this last stop would be omitted). Couple the keyboards.” Bédos de Celles, 523–4. Translation from Douglass (1969, 1995), 220.

FIGURE 5.3: Revised *Grand Jeu* Registration for the Redpath Hall Organ

GRAND ORGUE : *Prestant 4', Nazard 2⅔' Doublette 2', Tierce 1⅓', Trompette 8', Clairon 4', Cornet*
POSITIF : *Prestant 4', Nazard 2⅔' Doublette 2', Tierce 1⅓', Cromorne 8'*

“*Pédale : pleine*”

A common issue with the *Livre d'orgue plein jeu* and *grand jeu* combinations is Hambraeus' indications for the pedal. The treatment of the pedal in Hambraeus' music differs somewhat from French classical usage, so the information in the treatises is not particularly useful.⁸² In the *plein jeu* and *grand jeu* pieces, Hambraeus uses the term “*pleine*” for a full pedal sound but does not specify the exact names of the stops to use. In all, there are six instances of the term “*pleine*” in the *Livre d'orgue*, always accompanied by another indication like “*sans Grosse Tierce*” or “*avec les anches*” (see FIGURE 5.4).

FIGURE 5.4: Occurrences of “*pédale pleine*” registrations

TITLE	TYPE	GIVEN REGISTRATION
<i>Prologue sur les Grands-Jeux</i> , vol. 1	<i>grand jeu</i>	“ <i>pleine (sans Tierce) + Tirasses G.-O. et Pos.</i> ”
<i>Terme sur les Grands-Jeux</i> , vol. 1	<i>grand jeu</i>	“ <i>pleine (sans Tierce) Tirasses G.-O. et Pos.</i> ”
<i>Introduction sur les Pleins-Jeux</i> , vol. 2	<i>plein jeu</i>	“ <i>pleine, sans Grosse Tierce, mais avec les anches et les tirasses</i> ”
<i>Épilogue en dialogue entre les Pleins-Jeux du Grand-Orgue et du Positif, et le Cornet du Récit</i> , vol. 2	<i>plein jeu</i>	“ <i>pleine avec les anches; + Tirasse G.-O. et Pos.</i> ”
<i>Prélude sur les Pleins-Jeux</i> , vol. 3	<i>plein jeu</i>	“ <i>pleine, sans Bombarde 16' + Tirasse G.-O. et Pos.</i> ”

⁸² Hambraeus did not envision his pieces for the limited pedal of a French classical organ which typically has only a few 8' and 4' registers of flutes and reeds. Instead, he crafted his pedal registrations and usage according to the Redpath Hall specifications and its fully developed modern pedal with 16' flutes and reeds as well as a complete *jeu de tierce*. See chapter 6 for a discussion on interpreting Hambraeus' pedal registrations at French classical organs.

Observing just the first four instances, it would seem almost certain that “*pleine*” refers to the full chorus of flutes in the pedal which range from 16’ to 2’ with the two mutations (*Gros Nazard* and *Grosse Tierce*) added. The *Flûte* 2’ is the least necessary of the stops to include in this definition, since 2’ stops are rarely found in the pedal divisions of French classical organs. A conservative proposal for the *pleine* at the Redpath Hall organ could therefore consist of *Bourdon* 16’, *Flûte* 8’, *Gros Nazard* 5⅓’, *Flûte* 4’, and *Grosse Tierce* 3⅓’. However, this definition of *pleine* becomes confusing when taking into account the last two *pleine* registrations in the list.

“*Pleine, sans Bombarde*” implies that the *pleine* might also require all of the reeds as well as the foundations by default. This seems unlikely when compared to the other examples, but it begs the question; if Hambraeus did not intend to have the *Bombarde* 16’ in the *pleine*, then why does he indicate the combination as “*pleine, sans Bombarde*”? In both of these examples, the *Bombarde* 16’ is asked for later in the piece, so perhaps the indication at the beginning is simply in anticipation of that. Regardless of Hambraeus’ intentions, the “*pleine sans Bombarde*” marking is unclear when not viewed in the context of the other “*pleine*” examples. If the performer misreads the instruction to also include the other reeds with the foundations, then it leads to balance problems when the pedal is played alone with the *Positif*. My solution to this is to clarify the definition of *pleine* for each piece in the critical notes as well as to omit “*sans Bombarde*” from the *pleine* indications.

Labial and Reed Doublings

The classical sources vary on whether or not to combine labials and reeds at the 8’ pitch level. Hambraeus follows Dom Bédos lead by never adding labials at the same pitch as an 8’ reed, such as in his *Basse de Cromorne* registrations which always consist of the Dom Bédos recommendation of *Cromorne* 8’ and *Prestant* 4’. This differs from many of the earlier sources which often combine the *Bourdon* 8’ with the *Cromorne* (for example, Raison suggests that the *Cromorne* be combined with the *Bourdon* and 4’).⁸³ In the case of Redpath Hall however, adding the *Bourdon* 8’ to the *Cromorne* affects the speech of the *Cromorne*, particularly in the lower register where the speech becomes slow and

⁸³ “La BASSE de Tromp. ou de Cromorne a po’ accompagnem’ le Bourdon et le 4 pieds...” For the *Basse de Trompette* or the *Basse de Cromorne*, the appropriate reed is combined with the *Bourdon* and 4’...” André Raison, *Livre d’orgue* (1688). Translation from Douglass (1969, 1995): 200.

uneven. There are certain instances where a labial doubling can help to reinforce the sound, such as the addition of *Bourbons* 8' or even the *Montre* 8' to the *grand jeu* as is common in many of the sources predating Dom Bédos. The addition of labials on both manuals works particularly well to strengthen the *grand jeu* in the *Prologue sur les Grands-Jeux* from volume 1 which also has the *Bourdon* 16' combined with the *grand jeu*.

Wind Stability Considerations

As discussed earlier with the *plein jeu* example, a concern with the repairs and changes made to the leathering of the bellows at Redpath Hall in 2014 has been the way the new leathering and the added springs alter the way the wind bounces and shakes when disturbed by larger chords or large individual pipes like the wide-scale flutes of the *Pédale* and the *Grand Orgue*. Certain combinations, such as the two 8's of the *Grand Orgue* coupled to the flutes of the *Pédale*, can exaggerate the shaking more than would be expected from a historical instrument. One particular example where this effect is obvious concerns the opening section of the *Récit de Tierce en taille (II)* from volume 3. My initial solution, which successfully decreased the wind shake to a subtler level, was to remove the *Grand Orgue* to *Pédale* coupler to preserve wind that would otherwise be drawn for both the *Pédale* and *Grand Orgue* pipes. However, in consulting with John Grew on this matter, it became clear through his conversations with the composer that Hambraeus specifically expressed his desire for the use of the pedal coupler in this piece because he felt that the organ lacked the bass presence that he desired. As a result, rather than change the written registration, I changed the way that I played the pedal part, releasing the ends of notes slowly and more deliberately to control the shaking of the wind and this has yielded an equally effective solution. This articulation change is particularly noticeable in the opening section of the piece (see FIGURE 5.5) where the release of the pedal note before each new accented note causes the pitch of the upper voices to shake unrealistically.

FIGURE 5.5: Bengt Hambræus, “Récit de Tierce en taille (II),” *Livre d’orgue*, vol. 3, p. 38, mm. 11–12.



Tremulants

The *tremblant fort* of the organ has always been problematic and has been modified on several occasions over the years to attempt to make it work more effectively. Presently, the combination of the weight setting of the *tremblant fort* and the springs on the bellows prevents the *tremblant fort* from having a great deal of effect on the wind. My work-around solution was to combine both the *tremblant doux* and *tremblant fort* together when using the *tremblant fort*. This achieved a better effect on the wind and added an interesting colour to the music; however, a restored *tremblant fort* would be the ideal solution to this problem.

Notable Corrections

In addition to the general combinations, there are many other examples of specific individual stop combinations that require further clarification. Some are outright mistakes in the score that I have corrected, such as the “–4” indication on the fourth system, first measure in *Alternances* which is redundant because the 4’ has already been taken off in the first system, third measure (see FIGURE 5.6).

FIGURE 5.6: Bengt Hambræus, “Alternances,” *Livre d’orgue*, vol. 1, p. 3.

Handwritten musical score for "Alternances" by Bengt Hambræus. The score consists of four staves. Above the first staff, the tempo is marked $\text{♩} = 54$. The first staff has several registration markings: \downarrow Doublette 2', \downarrow Prestant 4', \downarrow Prest + Bourdon 16', \downarrow Bourdon 8', \downarrow Prest 4', \downarrow Fourn., and \downarrow Fourn. A box around the \downarrow Fourn. marking is labeled "-4' is indicated here". The second staff has markings: \downarrow Cymbale, \downarrow 16', \downarrow 3 1/2', \downarrow 3 1/2', \downarrow 16', and \downarrow 3 1/2'. The third staff has markings: \downarrow 8', \downarrow 2 3/5', \downarrow 8', \downarrow 3 1/5', \downarrow 2', and \downarrow 2'. The fourth staff has markings: \downarrow Cymbale, \downarrow 4', \downarrow 2', \downarrow 2 3/5', and \downarrow 2'. A box around the \downarrow 4' marking is labeled "-4' is indicated here again". The score ends with the number 24/381.

Another problematic mistake is a missing pedal registration in the *Basse et dessus de Trompette* from volume 4 (see FIGURE 5.7). Hambræus appears to have forgotten to write in a combination for the pedal part, so I have used his identical registration from the *Basse et dessus de Trompette* from volume 2 (see FIGURE 5.8) to fill in the missing pedal stops (*Bourdon* 16', *Flûte* 8', and the *Positif* to *Pédale* coupler).

FIGURE 5.7: Bengt Hambræus, “Basse et dessus de Trompette (III),” *Livre d’orgue*, vol. 4, p. 74, mm. 1–2.

Handwritten musical score for "Basse et dessus de Trompette (III)" by Bengt Hambræus. The score consists of three staves. Above the first staff, the tempo is marked $\text{♩} = 56$. The first staff is labeled "G-O" and has the registration: $\text{G-O: Prestant 4', Trompette 8', Clairon 4'}$. The second staff is labeled "Pos" and has the registration: $\text{Pos: Bourdon 8', Dessus 8', Quarte 2', Clarinet 1 1/2}$. The third staff is labeled "Ped" and has no registration. The score ends with the number 7.

FIGURE 5.8: Bengt Hambræus, “Basse et dessus de Trompette (I),” *Livre d’orgue*, vol. 2, p. 22, mm. 1–4.

$\text{♩} = 108$

Pos: Dessus de Flûte 8', Bourdon 8', Quart de Nazard 2' Larigot $1\frac{1}{2}$

G.O.: Prestant 4', Trompette 8', Clairon 4'

Ped: Bourdon 16', Flûte 8', Tirasse / Pos.

Moreover, there are also examples of pieces in which Hambræus seems to accidentally omit stops that would otherwise be present in Dom Bédos’ registrations. For example, in the *Récits de Tierce en taille (II)* and *(III)* (from volumes 3 and 4, see the volume 3 example in FIGURE 5.9), he omits the *Dessus de Flûte* from the *Positif jeu de tierce* despite Dom Bédos’ recommendation to combine the open 8’ together with the *Bourdon*. It is a subtle change to be sure, but the open 8’ adds an extra definition to the solo that otherwise would be lost when played with the *Bourdon* alone. In the *Récit de Tierce en taille (I)* from volume 2 (see FIGURE 5.10), written four months following the other examples, he asks for the two 8’s together, suggesting that he may have improved his idea of the registration by that time.

FIGURE 5.9: Bengt Hambræus, “Récit de Tierce en taille (III),” *Livre d’orgue*, vol. 4, p. 68, mm. 1–2.

très lentement.

G.O.: Montre 8', Bourdon 8'

Pos: Bourdon 8', Prestant 4', Nazard $2\frac{2}{3}$, Quarte 2', Tierce $1\frac{3}{5}$, Larigot $1\frac{1}{2}$

Ped: Bourdon 16', Flûte 8, Tirasse G.O.

FIGURE 5.10: Bengt Hambraeus, “Récit de Tierce en taille (I),” *Livre d’orgue*, vol. 2, p. 18, mm. 1–5.



Case Study: *Finale sur les Grands-Jeux en Dialogue avec le Cornet de Récit*, volume 4

The indication at the beginning of the *Finale sur les Grands-Jeux en Dialogue avec le Cornet de Récit* from volume 4 is for the *grands jeux* of the *Grand Orgue* and *Positif* coupled and the “*pédale pleine, sans Bombarde*”; with the pedal couplers. For the *grand jeu*, I follow my earlier suggestion with the addition of the upper work mutations to the reeds and the *Cornet*. The *Pédale* would be also as explained earlier with *Bourdon 16'*, *Flûte 8'*, *Gros Nazard 5 1/3'*, *Flûte 4'*, and *Grosse Tierce 3 1/5'* along with all of the couplers (see FIGURE 5.11)

FIGURE 5.11: Revised Opening Registration for “Final sur les Grands-Jeux en Dialogue avec le Cornet de Récit,” *Livre d’orgue*, volume IV

<i>GRAND ORGUE :</i>	<i>Prestant 4', Nazard 2 2/3', Doublette 2', Tierce 1 3/5',</i> <i>Trompette 8', Clairon 4', Cornet</i>
<i>POSITIF :</i>	<i>Prestant 4', Nazard 2 2/3', Quarte de Nazard 2', Tierce 1 3/5',</i> <i>Cromorne 8'</i>
<i>PÉDALE :</i>	<i>Bourdon 16', Flûte 8', Gros Nazard 5 1/3', Flûte 4',</i> <i>Grosse Tierce 3 1/5'</i>

This pedal registration then makes it possible to play the following section for *Positif* and *Pédale* alone (see FIGURE 5.12) by only removing the *Grand Orgue* to *Pédale* coupler as he indicates. I believe that the *tremblant* marking he writes here should be interpreted as the *tremblant fort* since it is the tremulant specified in treatises for the *grands* or *petits jeux*.

FIGURE 5.12: Bengt Hambraeus, “Finale sur les Grands-Jeux, en dialogue avec le Cornet de Récit,” *Livre d’orgue*, vol. 4, p. 87, mm. 26–31.



There is also one addition that I have made to Hambraeus’ instructions in order to give the parts a better balance. In FIGURE 5.13, which includes long sustained chords on the *Récit* and the *Cornet*, I find that the moving tenor line of the pedal part cannot be heard, so I suggest adding the *Pédale Trompette 8’* to reinforce this line. It can then be removed again, or kept for the rest of the piece, as I do not believe it interferes with the subsequent entry for the *Positif* and *Pédale* alone as the pedal part is quite short and articulated. However, the *Trompette* should be toggled on and off with the *Bombarde 16’* when going to the *Positif* at the end of the piece (see FIGURE 5.14), as otherwise the sound of the *Trompette* overpowers.

FIGURE 5.13: Bengt Hambraeus, “Finale sur les Grands-Jeux, en dialogue avec le Cornet de Récit,” *Livre d’orgue*, vol. 4, p. 89, mm. 81–93.

Handwritten musical score for Figure 5.13, showing three staves labeled Récit, Pos, and Péd. The Récit staff has a '(RÉCIT)' marking. The Pos staff has a 'POS.' marking. The Péd staff has a 'Péd.' marking. The music is in G major and 4/4 time.

FIGURE 5.14: Bengt Hambraeus, “Finale sur les Grands-Jeux, en dialogue avec le Cornet de Récit,” *Livre d’orgue*, vol. 4, p. 89, mm. 105–113.

The image shows a handwritten musical score for three staves: Récit (Recitation), G.O. (Grand Organe), and Péd. (Pédale). The score is written in a single system and includes various musical notations such as notes, rests, and dynamic markings like 'p' and 'f'. It also features performance instructions in French, such as 'Tirasse G.O. + Bombe', 'Tirasse G.O.', and 'Longue'. The notation is dense and includes many accidentals and articulation marks.

VI. PERFORMANCE CONSIDERATIONS AT HISTORICAL FRENCH CLASSICAL ORGANS

“It is important to note...that in spite of the ‘historic’ appearance of the new Redpath Hall organ, it is still an instrument which was built in our time. The fact that it is excellently well suited to serve an old repertoire does not eliminate its potential to function in a new repertoire from our own time.”⁸⁴

Hambraeus’ comments echoed that of the theme for the 1981 symposium surrounding the inauguration of the Redpath Hall organ – it is after all an “*orgue à notre époque*.” But the Redpath Hall organ’s connection to the past demands that it is also seen within the context of its historical counterparts. A logical starting point for investigating this connection is through the lens of Dom Bédos. In January 2017, I visited one of the few extant organs by Dom Bédos at the Church of Sainte-Croix in Bordeaux. The organ, finished in 1748, is significantly larger than the Redpath Hall organ, but reflects the same building and tonal concepts. It also has the tonal resources to interpret all of the registrations in *L’art du facteur d’orgues* without compromise, thereby serving as a source of inspiration when evaluating the sound qualities of these registrations at the Redpath Hall organ. Furthermore, it provided the opportunity to evaluate the Hambraeus pieces away from the Redpath Hall organ yet still fully within the stylistic world that Hambraeus imagined.

The Dom Bédos Organ in Bordeaux

When Dom Bédos arrived in Bordeaux from Toulouse in 1730 to become the secretary at the Abbey of Sainte-Croix, he was already an established organ-builder. Appointed to build a replacement for the Abbey’s 1661 organ by Haon, Dom Bédos constructed his magnum opus over a period of four years beginning in 1744. The organ is the largest remaining example of Dom Bédos’ output with 44 stops over 5 manuals and pedal (see FIGURE 6.1).

⁸⁴ Bengt Hambraeus, “Preface,” *Livre d’orgue*, (St. Hyacinthe: Les éditions Jacques Ostiguy, 1981).

FIGURE 6.1: The Organ by Dom Bédos de Celles at the Church of Sainte-Croix, Bordeaux, 1748.
Restored by Pascal Quoirin, 1997.

<i>POSITIF DE DOS</i> (C–d ^{'''}) ⁸⁵	<i>GRAND ORGUE</i> (C–d ^{'''})	<i>BOMBARDE</i> (CD–d ^{'''})
<i>Montre</i> 8'	<i>Bourdon</i> 32'	<i>Bombarde</i> 16'
<i>Bourdon</i> 8'	<i>Montre</i> 16'	<i>Gros Cromorne</i> 8'
<i>Prestant</i> 4'	<i>Bourdon</i> 16'	
<i>Flûte</i> 4'	<i>Montre</i> 8'	<i>RÉCIT</i> (g–d ^{'''})
<i>Nasard</i> 2 $\frac{2}{3}$ '	<i>Second</i> 8'	<i>Cornet</i> V
<i>Doublette</i> 2'	<i>Bourdon</i> 8'	<i>Trompette</i> 8'
<i>Tierce</i> 1 $\frac{3}{5}$ '	<i>Gros Nasard</i> 5 $\frac{1}{3}$ '	
<i>Larigot</i> 1 $\frac{1}{3}$ '	<i>Prestant</i> 4'	<i>ECHO</i> (c–d ^{'''})
<i>Cornet</i> V	<i>Grosse Tierce</i> 3 $\frac{1}{5}$ '	<i>Cornet</i> V
<i>Petit plein jeu</i> IX	<i>Nasard</i> 2 $\frac{2}{3}$ '	
<i>Trompette</i> 8'	<i>Doublette</i> 2'	<i>PÉDALIER</i> (FF–e') ⁸⁶
<i>Cromorne</i> 8'	<i>Tierce</i> 1 $\frac{3}{5}$ '	<i>Flûte</i> 16'
<i>Voix humaine</i> 8'	<i>Grosse Fourniture</i> II	<i>Flûte</i> 8' (wood)
<i>Clairon</i> 4'	<i>Grand Plein Jeu</i> XIII	<i>Flûte</i> 8' (metal)
	<i>Grand Cornet</i> V	<i>Flûte</i> 4'
COUPLERS	<i>1^{ère} Trompette</i> 8'	<i>Bombarde</i> 16'
<i>Positif to Grand Orgue</i>	<i>2^{ème} Trompette</i> 8'	<i>1^{ère} Trompette</i> 8'
<i>Bombarde to Grand Orgue</i>	<i>Clairon</i> 4'	<i>2^{ème} Trompette</i> 8'
		<i>Clairon</i> 4'
PITCH	TEMPERAMENT	
a=392 Hz	Rameau (1726)	<i>Tremblants fort et doux</i>

The organ is the sole surviving French classical instrument with a 32' in the *plein jeu*. It is also notable for its two *Cromornes*, the standard *Cromorne* in the *Positif* and an additional *Cromorne* in the *Bombarde*. The large battery of reeds and the 16' pedal division which were absent in earlier organs had become common by the mid-18th century. The organ fortunately survived the French revolution, but in 1817, the pipework, action, and wind chests were moved to the nearby Cathedral of Saint-André at the request of the then Archbishop. Meanwhile, the pipework of the cathedral organ was installed behind the empty façade in Sainte-Croix. During its time in the Cathedral, the Dom Bédos organ underwent several reconstructions, most notably work carried out by Henry in 1937 and Wenner in 1877. In 1970, the Ministry of Culture approved the dismantling of the remaining pipe work (37 out of the original 45 stops) and the wind chests in order to restore the

⁸⁵ The first C# of the *Positif* and *Grand Orgue* sounds at the pitch AA (A0).

⁸⁶ The *Bombarde* 16' begins at AA (A0), the *Trompettes* and *Clairon* at FF (F0) and the *Flûtes* at C (C1).

organ in its original case in Sainte-Croix. The restoration work was carried out between 1984 and 1997 and required the reconstruction of nearly 1,950 pipes.

Field Work in Bordeaux, January 2017

I visited the Sainte-Croix church in January 2017 to document the organ and test out the Dom Bédos combinations as well as some of Hambraeus pieces. The sessions totalled approximately 10 hours. Each of the sessions were recorded using an audio recorder placed in the chancel of the church and a video recorder placed by the playing desk of the organ. My observations can be classified into three categories: recordings of each stop from bass to treble, the testing of period pieces using the instructions from *L'art du facteur d'orgues*, and the testing of Hambraeus' pieces using the written registrations.

The first set of tests, recording and analysing the sound of each of the 45 registers, were meant to be an empirical means of comparing the identical stops on both the Redpath and Bordeaux organs. It was fascinating to hear the similarities in the organs despite being built by different builders in different times (a testament to the thoroughness of both Dom Bédos and Wolff). However, there are some rather distinct differences in some of the individual stops. In particular, I observed that the upper work, the mixtures, the *Prestants*, the *Doublettes*, and the mutations of the *jeux de tierce* tended to sound brighter and clearer on the Bordeaux organ, compared to the softer, rounder sound of the upper work at Redpath Hall. This is likely in part related to the voicing of the respective organs in very different spaces. In Bordeaux, the room is significantly larger than Redpath Hall and the reverberation is several seconds longer. Being a smaller room, Redpath Hall requires a more sensitive approach to voicing so that the organ tone does not overpower the space. Another difference in the two organs is the voicing and construction of the pedal reeds that I observed when using them in period pieces like a *plein jeu* with the cantus firmus in the pedal. The *Pédale Trompette* and *Clairon* on the Redpath Hall organ are located behind and below the *Grand Orgue* pipework rather than at the same level of the *Grand Orgue* as is the case in Bordeaux. As a result, the Bordeaux pedal reeds speak more directly into the church and are noticeably more dominant in cantus firmus textures. The *Bombarde* 16's of the two organs are also of entirely different constructions. As I mentioned in Chapter 2, the *Bombarde* 16' in Redpath was rebuilt in a Germanic style to permit the playing of a wider variety of repertoire and therefore does not have the distinctive sound of a French *Bombarde* 16' which is meant to dominate a texture. Even when the *Bombarde* 16' was first built for

Redpath Hall with the French-style shallots, it still lacked the power and dominance of sound embodied by the *Bombarde* 16' in Bordeaux. I would attribute this to the half-length resonators that Wolff employed when constructing his *Bombarde* 16'.

Bringing Hambraeus to Bordeaux: Some Observations

Interpreting the *Livre d'orgue* at a historical French classical instrument presents some challenges over and above those encountered at Redpath Hall. In particular, one must adapt to differences in the organ's historical specifications (particularly for the pedal divisions) and the keyboard compasses. For the *Duo* (*canone al rovescio*) from volume 4, the given registration for the Redpath organ (see FIGURE 6.2) can be replicated exactly at almost any French classical instrument. In Bordeaux, it is even possible to include the additional *jeu de tierce* ranks specified by Dom Bédos which are absent from the Redpath Hall organ (see Figure 6.3).⁸⁷

FIGURE 6.2: Hambraeus' Registration for "Duo (canone al rovescio)," *Livre d'orgue*, Volume 4 at the Redpath Hall Organ

GRAND ORGUE: Bourdon 16', Montre 8', Bourdon 8', Prestant 4', Grosse Tierce 3½',
Nazard 2⅔', Doublette 2', Tierce 1⅓'

POSITIF: Dessus de Flûte 8', Bourdon 8', Prestant 4', Nazard 2⅔', Quarte de
Nazard 2', Tierce 1⅓'

FIGURE 6.3: Interpreted Registration for the "Duo (canone al rovescio)," *Livre d'orgue*, Volume IV at the Bordeaux Organ

GRAND ORGUE: Bourdon 32', Montre 16', Bourdon 16', Montre 8', Second 8', Bourdon
8, Gros Nasard 5⅓', Prestant 4', Nasard 2⅔', Doublette 2', Tierce
1⅓'

POSITIF: Montre 8', Bourdon 8', Prestant 4', Nasard 2⅔', Doublette 2', Tierce
1⅓'

⁸⁷ Dom Bédos gives the following instructions for the *Duo*:

On mettra au grand Orgue tous les Jeux de fond, même le 32 pieds, s'il y en a, comme au Plein-Jeu. On y ajoutera les deux Nasards, les deux Tierces et la Quarte, sans Doublette, à moins qu'il n'y eut pas de Quarte : c'est ce qu'on appelle le grand Jeu de Tierce. Au Positif on mettra le 8 pieds ouvert, le Bourdon de 8 pieds, le Prestant, le Nasard, le Quarte et la Tierce. S'il n'y a pas de Quarte, on mettra la Doublette : ce mélange s'appelle le Jeu de Tierce du Positif. (On the *Grand Orgue*, use all the foundation stops, even the 32', if there is one, as for the *plein jeu*. Add to this the two *Nasards*, two *Tierces* and *Quarte*, without *Doublette*, unless there is no *Quarte*. This is called the *grand jeu de tierce*. On the *Positif* use the open 8', *Bourdon* 8', *Prestant*, *Nasard*, *Quarte*, and *Tierce*. If there is no *Quarte*, use the *Doublette*. This combination is called the *jeu de tierce du Positif*).

Bédos de Celles, 524; Translation from Douglass (1969, 1995), 220.

The pieces with pedal parts can be somewhat more difficult to interpret within the limitations of the French classical pedal divisions. In Bordeaux, the presence of the two 16' stops (*Flûte* and *Bombarde*) allows for most of the pieces to be adapted, but the standard 8'-based pedals of earlier instruments is more problematic. The Dom Bédos registration given by Hambræus for the *Récit de Tierce en taille* is not possible on organs lacking a 16' in the pedal and must instead be played using a registration such as from Lebègue's *Première livre d'orgue* which includes a 16' in the accompaniment manual which would be coupled to the pedal.⁸⁸ Pieces which make use of the pedal mutations or the unique *Flûte 2'* of the Redpath Hall organ are also very difficult to interpret at the French classical instruments which rarely have a *jeu de tierce de Pédale*. In a piece like the *Ronde des tierce en couple* from volume 3, the pedal indication of *Bourdon 16'*, *Grosse Tierce 3½'*, and *Flûte 2'* would not be possible on most French classical organs. Even organs with a *Grand Orgue to Pédale* coupler cannot reproduce the effect as the given *Grand Orgue* registration is independent of the *Pédale*. In a case like this, one would need to reinterpret the registration with stops of different sounding pitches.

The classical keyboard compass is by far the greatest challenge in adapting the *Livre d'orgue* pieces to historical organs. The common practice among historical builders to omit the lowest C-sharp (C#1) from the manual keyboards makes passages such as the one in FIGURE 6.4 difficult to adapt.

FIGURE 6.4: Bengt Hambræus, "Basse et dessus de Trompette (III)," *Livre d'orgue*, vol. 4, p. 75, mm. 44–49



In addition, passages on the *Récit* manual are often hindered by the slightly smaller compasses of historic *Récit* divisions. The *Récit* on the Redpath Hall organ extends from f to d''' (F2 to D5)

⁸⁸ Lebègue's instructions for the accompaniment of the *Tierce en taille* is "...sur les petit Bourdon, Prestant, Bourdon ou Montre de seize pieds de la Grand Orgue." (on the *Grand Orgue* : Petit Bourdon, Prestant and Bourdon or Montre 16'). Nicolas Lebègue, *Premier livre d'orgue* (1676), translation from Douglass (1969, 1995), 197.

whereas some instruments only begin at g (G2) or c' (C3). In the case of his *Finale sur les Grands-Jeux en dialogue avec le Cornet de Récit* from volume 4 (FIGURE 6.5), he provides optional notes in the upper register for historical organs with a limited compass, but does not take into account the impossible Fs and F-sharps on the lower end of the historical *Récit* compass.

FIGURE 6.5: Bengt Hambraeus, “Finale sur les Grand-Jeux en dialogue avec le Cornet de Récit,” *Livre d’orgue*, vol. 4, p. 88, mm. 59–65.



In Bordeaux, I overcame this problem by playing the *Récit* sections on the *Echo Cornet* which extends further down to c (C2). In some ways it is unfortunate that Hambraeus did not take these historical limitations into account when writing his pieces, but then again, perhaps his original intention was always to make these works unique to the Redpath Hall organ.

VII. CONCLUSIONS AND FUTURE WORK

Gathering from the recollections of Bengt Hambraeus' colleagues and friends, it could be that a project of this kind that creatively explores time capsules from the past would have been to his liking. I view this project as an open book that will continue to evolve each time I return to the *Livre d'orgue* time capsule. The Redpath Hall organ will also continue to evolve and change as it has done over its 36-year history. What will remain constant is the spirit of Hambraeus' approach to his creation, a document that is not frozen in time, but sheds light on the past and gives birth to new ideas.

The Critical Report and the Need for a New Edition

The critical report included in this document is a work in progress. In addition to my work on the organ registrations and my suggestions for improvements is the need to do a thorough editorial review of all aspects of the work: tempo and expression indications, note errors, nomenclature inconsistencies, etc. These should be addressed in a new edition to clarify some of the inconsistencies and make these refinements available to a wider audience. The first publication, which numbered only 500 copies, is long out of print and the publisher Jacques Ostiguy is no longer active. A new edition of the *Livre d'orgue* would bring this music to a wider audience and this research on the refinement of the Redpath Hall registrations will help to clarify questions of interpretation for future performers. It is my hope that this work will serve as a starting point for the wider dissemination of Hambraeus' oeuvre as a whole and this very special collection of 48 pieces.

APPENDIX

Specifications for Wolff et Associés, Opus 24 (Redpath Hall, 1981)

GRAND ORGUE (2nd manual, C–g^{'''})

<i>Bourdon</i>	16'	(C–b in wood, rest in hammered metal)
<i>Montre</i>	8'	(in tin)
<i>Bourdon</i>	8'	(C–B in wood, rest in hammered metal)
<i>Prestant</i>	4'	(in tin)
<i>Grosse Tierce</i>	3½'	(in hammered metal, cylindrical)
<i>Nazard</i>	2⅔'	(in hammered metal, cylindrical)
<i>Doublette</i>	2'	(in hammered tin)
<i>Tierce</i>	1⅜'	(in hammered metal)
<i>Fourniture</i>	2'	IV / III (in tin, adjustable for 16' or 8' <i>plein jeu</i>)
<i>Cymbale</i>	½'	III (in tin)
<i>Cornet</i>	V	(in hammered metal, c'–d ^{'''} or c#–d ^{'''})
<i>Trompette</i>	8'	(in hammered tin, 1 st notch for bass register; 2 nd notch for treble and bass)
<i>Clairon</i>	4'	(in hammered tin)
<i>Voix humaine</i>	8'	(in hammered tin)

POSITIF (1st manual, C–g^{'''})

<i>Dessus de flûte</i>	8'	(in tin, façade, C–B from the <i>Bourdon</i> , rest open)
<i>Bourdon</i>	8'	(C–c# in wood, rest in hammered metal)
<i>Prestant</i>	4'	(in tin, façade)
<i>Nazard</i>	2⅔'	(in hammered metal, cylindrical)
<i>Quarte de Nazard</i>	2'	(in hammered metal, cylindrical)
<i>Tierce</i>	1⅜'	(in hammered metal, cylindrical)
<i>Larigot</i>	1⅓'	(in metal)
<i>Fourniture</i>	1'	III (in tin)
<i>Cymbale</i>	1⅓'	II (in tin)
<i>Cromorne</i>	8'	(in hammered tin)

RÉCIT (3rd manual, f–d^{'''})

<i>Bourdon</i>	8'	(in hammered metal)
<i>Prestant</i>	4'	(in hammered metal)
<i>Cornet</i>	III	(in hammered metal)
<i>Hautbois</i>	8'	(in hammered tin)

PÉDALE (C–f, reeds AA–f)

<i>Bourdon</i>	16'	(in wood)
<i>Flûte</i>	8'	(C–B in wood, c–f in hammered metal)
<i>Gros Nazard</i>	5½'	(in hammered metal, C–B stopped)
<i>Flûte</i>	4'	(in hammered metal)
<i>Grosse Tierce</i>	3½'	(in hammered metal)
<i>Flûte</i>	2'	(in hammered metal)
<i>Bombarde</i>	16'	(in wood with metal shallots since 2006)
<i>Trompette</i>	8'	(in hammered tin)
<i>Clairon</i>	4'	(in hammered tin)

COUPLERS AND ACCESSORIES

<i>Positif to Grand Orgue</i>	<i>Tremblant fort</i>
<i>Grand Orgue to Pédale</i>	<i>Tremblant doux</i>
<i>Positif to Pédale</i>	<i>Rossignol</i>

Wind pressure: 75mm.

Temperament after D'Alembert, a = 415 Hz.

MIXTURES

GO Fourn.	C	(15).19.22.26	GO Cymb.	C	29.33.36
	c	(12).15.19.22		c	26.29.33
	f#	(8).12.15.19		f#	22.26.29
	f#'	(5).8.12.15		c'	19.22.26
	f#''	1.(5).8.12		f#'	15.19.22
				c''	12.15.19
				f#''	8.12.15
Pos. Four.	C	22.26.29	Pos. Cymb.	C	33.36
	c	19.22.26		c	29.33
	f#	15.19.22		f#	26.29
	c'	12.15.19		c'	22.26
	f#'	8.12.15		f#'	19.22
				c''	15.19
				f#''	12.15
	c'''	1.8.12		c'''	12.15

() = 16' harmonic

Composition Dates of Pieces in *Livre d'orgue*

DATE	VOLUME	PIECE	TITLE
1980-11-01	4	1	<i>Ouverture sur les Grands-Jeux</i>
1980-11-05	4	2	<i>Duo (canone al rovescio)</i>
1980-11-12	4	4	<i>Récit de Tierce en taille (III)</i>
1980-12-05	3	4	<i>Ronde des tierces en couple</i>
1980-12-13	3	3	<i>Récit de Tierce en taille (II)</i>
1980-12-15	4	7	<i>Basse et dessus de Trompette (III)</i>
1980-12-15	4	12	<i>Finale sur les Grands-Jeux, en dialogue avec le Cornet de Récit</i>
1980-12-23	4	3	<i>Caprice sur les timbres de quinte et tierce</i>
1980-12-28	4	5	<i>Basse de Cromorne (III)</i>
1980-12-29	2	1	<i>Introduction sur les Plein Jeux</i>
1980-12-29	4	6	<i>Récit de Mixtures</i>
1981-01-03	2	3	<i>Basse de Cromorne (I) - Hommage à Clément Janequin</i>
1981-01-06	4	11	<i>Récit de Nazard</i>
1981-01-10	2	2	<i>Mouvement perpétuel</i>
1981-01-10	3	12	<i>Postlude sur les Grand Jeux</i>
1981-01-23	2	10	<i>Monodie avec des timbres changeants</i>
1981-01-24	2	8	<i>Vibrations</i>
1981-01-25	2	12	<i>Épilogue en dialogue entre les Plein Jeux du Grand-Orgue et du Positif, et le Cornet du Récit</i>
1981-01-28	2	11	<i>Récit de Voix humaine</i>
1981-02-01	3	7	<i>Basse et dessus de Trompette (II)</i>
1981-02-05	2	6	<i>Fugue grave sur les Prestants, et toutes les anches</i>
1981-02-09	3	8	<i>Fugue grave sur les fonds</i>
1981-02-09	3	10	<i>Stratifications</i>
1981-02-11	2	5	<i>Caprice en dialogue</i>
1981-02-22	3	11	<i>Récit du Hautbois, du Jeu de Tierce, de la Voix humaine, et du Cornet</i>
1981-03-02	3	5	<i>Trio</i>
1981-03-04	3	6	<i>Les timbres irisés</i>
1981-03-06	3	9	<i>Basse de Cromorne (II)</i>
1981-03-08	4	8	<i>Monodie sur le Grand Jeu de Tierce</i>

1981-03-10	4	9	<i>Toccata sur les Pleins-Jeux, et la Trompette du Grand-Orgue</i>
1981-03-12	4	10	<i>Fugue sur les Plains-Jeux, avec les anches</i>
1981-03-20	2	4	<i>Récit de Tierce en taille (I)</i>
1981-03-23	1	6	<i>Cromorne en taille</i>
1981-03-24	1	4	<i>Alternances</i>
1981-03-24	1	5	<i>Transition</i>
1981-03-25	1	1	<i>Prologue sur les Grands-Jeux</i>
1981-03-26	1	7	<i>Perspectives du Mi en quatuor</i>
1981-03-27	1	2	<i>Récit de Cornet</i>
1981-03-27	2	9	<i>Clairon en taille</i>
1981-03-28	1	3	<i>Agilité</i>
1981-03-29	1	9	<i>Champs</i>
1981-03-29	1	10	<i>Fanfares</i>
1981-03-30	1	11	<i>Choral</i>
1981-04-01	1	12	<i>Terme sur les Grand Jeux</i>
1981-04-02	1	8	<i>Air profond</i>
No Date	2	7	<i>Basse et dessus de Trompette (I)</i>
No Date	3	1	<i>Prélude sur les Pleins-Jeux</i>
No Date	3	2	<i>Répercussions</i>

Redpath Hall Organ Inauguration Concert Program

The inaugural concert for the completed organ was given by John Grew during the *L'orgue à notre époque* symposium on May 26, 1981 in Redpath Hall. Hellmuth Wolff gave the opening remarks. The program order is reproduced below.

Hellmuth Wolff

Présentation

John Grew

Plein jeu (*Premier Livre*)

Louis Marchand

Basse de Trompette (*Premier Livre*)

1669–1732

Tierce en taille (*6^e Ton. Premier Livre*)

Nicolas Lebègue

Trio à 3 claviers (*2^e Ton. Premier Livre*)

1630–1702

5^e Fugue sur le même Sujet (*Pièces d'Orgue*)

Jean-Henry d'Anglebert

1635–1691

Trois extraits tiré du *Livre d'Orgue de McGill 1980–81*

Bengt Hambraeus

Choral

Ronde de Tierces en couple

Récit de Nazard

Noël: *Chantons à voix hautaine*

Jean-François Dandrieu

1682–1738

After the completion of the restoration of Redpath Hall, a ceremony on September 23, 1982 marked the reopening of the hall and the dedication of the organ. The concert was given by Donald Mackey and John Grew. During the program, Bengt Hambræus presented the *Livre d'orgue* to Paul Peterson, Dean of the Faculty of Music.

SEPTEMBER 23, 1982

Lecture Recital Program

I presented my Doctoral Lecture Recital on February 18, 2017 in Redpath Hall. It included a presentation of my doctoral research and excerpts from Bengt Hambraeus' *Livre d'orgue* and the 17th century collection *Livre d'orgue de Montréal*. The program is reproduced below.

Le samedi 18 février 2017
à 19h

Saturday, February 18, 2017
7:00 p.m.

Conférence-récital de doctorat

Doctoral Lecture-Recital

Mark McDonald

orgue / organ

classe de / class of Hans-Ola Ericsson

Livre d'orgue, vol. 1 (excerpts / extraits)

Bengt Hambraeus

Prologue sur les Grands-Jeux (25/3/81)

(1928–2000)

Récit de Cornet (27/3/81)

Alternances (24/3/81)

Air profond (2/4/81)

Conférence / Lecture

Une revue critique des registrations de l'orgue telles que décrites du *Livre d'orgue* de Bengt Hambraeus /

A Critical Revision of the Organ Registrations in Bengt Hambraeus' *Livre d'orgue*

Livre d'orgue de Montréal (extraits / excerpts)

anon. 17^{ème} siècle / 17th c.

Plein jeu en fa majeur (n° 134)

Duo (n° 135)

Basse de trompette (n° 140)

Tierce en taille en fa majeur [de N. Lebègue] (n° 195)

Dialogue [sur les Grands-Jeux] (n° 142)

Livre d'orgue, vol. II–IV (extraits / excerpts)

B. Hambraeus

Introduction sur les Pleins-Jeux (vol. II, 29/12/80)

Duo canone al rovescio (vol. IV 5/11/80)

Basse de Cromorne III (vol. IV, 28/12/80)

Récit de Tierce en Taille II (vol. III, 13/12/80)

Basse et Dessus de Trompette III (vol. IV, 18/12/80)

Récit de Nazard (vol. IV, 6/1/81)

Finale sur les Grands Jeux,

en dialogue avec le Cornet de Récit (vol. IV, 15/12/80)

Ce concert fait partie des épreuves imposées à Mark McDonald pour l'obtention d'un doctorat en interprétation.

This recital is presented by Mark McDonald in partial fulfillment of the requirements for the degree of Doctor of Music in Performance.

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Bengt Hambraeus

Livre d'orgue

CRITICAL NOTES

Mark McDonald

May 2017

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Introduction

The *Critical Notes* is a working document for tracking editorial notes for the *Livre d'orgue* of Bengt Hambraeus. The focus of this initial document is on the markings related to organ registrations and the presentation of suggested registration revisions.

Sources

JO.1981.389	First edition by Éditions Jacques Ostiguy, Inc., May 1, 1981, print number 388, owned by Mark McDonald
JO.1981.JG	First edition by Éditions Jacques Ostiguy, Inc., May 1, 1981, owned by John Grew

Abbreviations

Acc.	Accessories
accomp.	Accompaniment
Coup.	Coupler(s)
ev.	<i>eventuellt</i> (possibly)
G.-J.	Grand-Jeu
G.-O.	Grand-Orgue
h. d.	half drawn
m(m).	measure number(s)
n. d.	no composition date written
n. t.	no tempo indication written
Péd.	Pédale
Pos.	Positif
Réc.	Récit
s(s).	system number(s)
/	coupled to
	line break

Piece classification types

Duo
Fugue
Grand jeu
Other ("character piece," see *Forward* of JO.1981)
Plein jeu
Récit de basse
Récit de basse et dessus
Récit de dessus
Récit en taille

Volume I

Date: March 23, 1981–April 2, 1981

Pieces: Récit en taille, Grand jeu (2), Plein jeu, Récit de dessus, Other (8)

1.1: Prologue sur les Grands-Jeux

Date: March 25, 1981

Classification: Grand jeu

Time signature: 4/4

Tempo: ♩ = 54–60

Original Registration:

G.-O: | Pos: Grand Jeu, +16' (accoupl.!)

Péd: Pleine (sans Tierce), + Tirasses G.-O. et Pos.

m. 10: – Tirasse G-O

m. 15: + Tirasse G.-O

Suggested Revised Registration:

G.-O. Bourdon 16', Prestant 4', Nazard 2⅔', Doublette 2', Tierce 1⅓', Cornet, Trompette 8',
Clairon 4'

Pos. Prestant 4', Nazard 2⅔', Quarte de Nazard 2', Tierce 1⅓', Cromorne 8'

Péd. Bourdon 16', Flûte 8', Gros Nazard 5⅓', Flûte 4'

Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

m. 10 – G.-O./Péd.

m. 15 + G.-O./Péd.

1.2: Récit de Cornet

Date: March 27, 1981

Classification: Récit de dessus

Time signature: 2/2

Tempo: *Assez lentement* (quite slowly)

Original Registration:

Réc: Cornet, Bourdon 8' Prestant 4'

G.-O. : Bourdon 8'

Péd : Bourdon 16', Tirasse G-O.

Suggested Revised Registration:

Réc. Bourdon 8', Prestant 4', Cornet

G.-O. Bourdon 8'

Péd. Bourdon 16'

Coup. G.-O./Péd.

1.3: Agilité

Date: March 28, 1981

Classification: Other

Time signature: 4

Tempo: ♩ = 96 (*Très légèrement*) (very lightly)

Original Registration:

Pos : Bourdon 8, Larigot 1½, Cymbale

G.-O. : Bourdon 16', Prestant 4

m. 12 +G-O/POS

Suggested Revised Registration:

G.-O. Bourdon 16', Prestant 4'

Pos. Bourdon 8', Larigot 1½', Cymbale

Notes:

m. 13 Pos./G.-O. coupler is too loud and cumbersome, the chord can be easily played with one hand on G.-O. and the other on the Pos.

1.4: Alternances

Date: March 24, 1981

Classification: Other

Time signature: 4

Tempo: ♩ = 54

Original Registration:

[G.-O. :] Doublette 2'

+Tremblant doux. On peut tenir le La grave avec la pédale (seulement Tirasse G.-O. !) (You can hold the low A with the pedal)

m. 1.3 + Prestant 4

m. 2.1.1 – Prest

m. 2.1.2 + Bourd. 16'

m. 2.3 + Bour 8'

m. 2.4.1 + Prest 4

m. 2.4.2 + Fourn.

m. 3.1.1 – 8' | – 4'

m. 3.1.2 – 16'

m. 3.3 – Fourn.

m. 4.1 + 3½

m. 4.2 + 2⅔

m. 5 – 3½ | – 2⅔

m. 6.1 + 16'

m. 6.2 + 3½

m. 7.1 + Cymbale

m. 7.4.1 – 3½

m. 7.4.2 – 16'

m. 8.1 + 8'
 m. 8.4 + 2 $\frac{2}{3}$ '
 m. 9.1 – 8'
 m. 9.2 + 3 $\frac{1}{5}$ '
 m. 9.3 – 2'
 m. 10.2 – cymbale
 m. 10.3 – 4', + 2'
 m. 12 – 2 $\frac{2}{3}$ '

Suggested Revised Registration:

G.-O. Doublette 2'
 Coup. G.-O./Péd.
 Acc. Tremblant doux

m. 1.3 + Prestant 4'
 m. 2.1.1 – Prestant 4'
 m. 2.1.2 + Bourdon 16'
 m. 2.3 + Bourdon 8'
 m. 2.4.1 + Prestant 4'
 m. 2.4.2 + Fourniture (h. d.)
 m. 3.1.1 – Bourdon 8', Prestant 4'
 m. 3.1.2 – Bourdon 16'
 m. 3.3 – Fourniture
 m. 4.1 + Grosse Tierce 3 $\frac{1}{5}$ '
 m. 4.2 + Nazard 2 $\frac{2}{3}$ '
 m. 5 – Grosse Tierce 3 $\frac{1}{5}$, Nazard 2 $\frac{2}{3}$ '
 m. 6.1 + Bourdon 16'
 m. 6.2 + Grosse Tierce 3 $\frac{1}{5}$ '
 m. 7.1 + Cymbale
 m. 7.4.1 – Grosse Tierce 3 $\frac{1}{5}$ '
 m. 7.4.2 – Bourdon 16'
 m. 8.1 + Bourdon 8'
 m. 8.4 + Nazard 2 $\frac{2}{3}$ '
 m. 9.1 – Bourdon 8'
 m. 9.2 + Grosse Tierce 3 $\frac{1}{5}$ '
 m. 9.3 – Doublette 2'
 m. 10.2 – Cymbale
 m. 10.3 + Doublette 2'
 m. 12 – Nazard 2 $\frac{2}{3}$ '

Notes:

m. 7 barline missing
 m. 8 barline missing
 m. 10 – 4' marking redundant (already removed in m. 3)

1.5: Transition

Date: March 24, 1981

Classification: Other

Time signature: unmetered

Tempo: ♩ = 84 *sempre legato* !

Original Registration:

G.-O. : Bourdon 16, Cymbale III

Péd : Bourdon 16 ; Tirasse G.-O.

Suggested Revised Registration:

G.-O. Bourdon 16', Cymbale

Péd. Bourdon 16'

Coup. G.-O./Péd.

1.6: Cromorne en taille

Date: March 23, 1981

Classification: Récit en taille

Time signature: 4

Tempo: ♩ = 54

Original Registration:

G.-O : Montre 8', Bourdon 8'

Pos : Prestant 4' Cromorne 8'

Péd. Bourdon 16', Flûte 8'

Suggested Revised Registration:

G.-O. Montre 8', Bourdon 8'

Pos. Prestant 4', Cromorne 8'

Péd. Bourdon 16', Flûte 8'

Coup. G.-O./Péd.

1.7: Perspectives du Mi en quatuor

Date: March 26, 1981

Classification: Other

Time signature: 4/4

Tempo: ♩ = 60

Original Registration:

Réc : Bourdon 8'

G-O : Bourdon 8'

Pos. : Bourdon 8'

Péd : Flûte 4' (seulement)

Suggested Revised Registration:

Réc. Bourdon 8'

G.-O. Bourdon 8'
Pos. Bourdon 8'
Péd. Flûte 4'

Notes:

m. 33 Fingering in right hand should be 5 and 2 on Réc. and 1 on G.-O.

1.8: Air profound

Date: April 2, 1981

Classification: Plein jeu

Time signature: 2/2

Tempo: ♩ = 52

Original Registration:

G.-O : Plein jeu | (sans anches)

Péd : Bombarde 16, Trompette 8' Clairon 4', Nazard 5⅓, Tierce 3⅕. [Tremblant (fort!) pour tout l'orgue, ad lib.] | + Tirasse G.-O

Suggested Revised Registration:

G.-O. Bourdon 16', Montre 8', Prestant 4', Doublette 2', Fourniture, Cymbale

Péd. Gros Nazard 5⅓', Grosse Tierce 3⅕', Bombarde 16', Trompette 8', Clairon 4'

Coup. G.-O./Péd.

Acc. Tremblant fort

m. 39 – Tremblant fort (on release of final chord)

1.9: Champs

Date: March 29, 1981

Classification: Other

Time signature: 4/4

Tempo: *Tempo : Chaque mesure correspond à* (each measure corresponds to) 4 ♩, *avec* (with) ♩ = M. M. 56

Original Registration:

G.-O. : Bourdon 8'

Pos. : Bourdon 8'

m. 16 G.-O. : + Nazard 2⅔' | Pos : + Nazard 2⅔'

m. 21 G.-O. + Cymbale III | Pos. + Cymbale II

m. 29 G.-O. + Fourniture IV-III | Pos + Fourniture III

m. 33 G.-O : + Doublette 2' | Pos : + Quarte de Nazard 2'

m. 36 [G.-O. :] – Doubl, Fourniture | [Pos. :] – Quarte de N. Four- | niture

Suggested Revised Registration:

G.-O. Bourdon 8'

Pos. Bourdon 8'

m. 16 G.-O. + Nazard 2⅔'

Pos. + Nazard 2⅔'

m. 21 G.-O. + Cymbale

Pos. + Cymbale
 m. 29 G.-O. + Fourniture
 Pos. + Fourniture
 m. 33 G.-O. + Doublette 2'
 Pos. + Quarte de Nazard 2'
 m. 36 G.-O. – Doublette 2', Fourniture
 Pos. – Quarte de Nazard

1.10: Fanfares

Date: March 29, 1981

Classification: Other

Time signature: 4

Tempo: ♩ = 84

Original Registration:

G.-O. : Trompette 8', Prestant 4', Bourdon 16'

Pos : Dessus de Flûte 8', Bourdon 8' Prestant 4' Quarte de Nazard 2' Cromorne 8'.

Ped : Clairon 4', Flûte 2'

m. 22 G.-O. : + Fourniture | + Tirasse G-O

Suggested Revised Registration:

G.-O. Bourdon 16', Prestant 4', Trompette 8'

Pos. Bourdon 8', Prestant 4', Quarte de Nazard 2', Cromorne 8'

Péd. Clairon 4', Flûte 2'

m. 22 G.-O. + Fourniture (h. d.)

Coup. + G.-O./Péd.

1.11: Choral

Date: March 30, 1981

Classification: Other

Time signature: 8/8

Tempo: ♩ = 48–50 (♩ = 96–100)

Original Registration:

G.-O. : Prestant 4', Nazard 2 $\frac{2}{3}$ ', Tierce 1 $\frac{3}{5}$ '

Récit : Bourdon 8', Prestant 4'

Ped : Bourdon 16', Bourdon 8', Flûte 4' | (sans tirasses !)

m. 11 G.-O. : – Prestant 4', Tierce 1 $\frac{3}{5}$ | + Montre 8', Doublette 2' [le Nazard demeure toujours !] (the Nazard remains)

m. 19 G.-O. : + Bourdon 8'

m. 31 G-O : + Tierce 1 $\frac{3}{5}$ '

m. 32 [G.-O. :] + Prestant 4' *tirez le Prestant très lentement (pull the Prestant very slowly)

Suggested Revised Registration:

Réc. Bourdon 8', Prestant 4'

G.-O. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Tierce 1 $\frac{3}{5}$ '

Péd. Bourdon 16', Flûte 8', Flûte 4'

m. 11 G.-O. – Prestant 4', Tierce 1 $\frac{3}{5}$ '
+ Montre 8', Doublette 2'

m. 19 G.-O. + Bourdon 8'

m. 31 G.-O. + Tierce 1 $\frac{3}{5}$ '

m. 32 G.-O. + Prestant 4' (drawn slowly) \

1.12: Terme sur les Grands-Jeux

Date: April 1, 1981

Classification: Grand jeu

Time signature: 4

Tempo: *Impétueusement, presque violemment* (Impetuously, almost violently)

Original Registration:

G.-O./Pos. Grand Jeu (+ accoupl.)

Ped. : Pleine (sans Tierce), Tirasses G.-O. et Pos.

m. 9 – Tir. G-O

m. 15 + Tir. G.-O

Suggested Revised Registration:

G.-O. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Doublette 2', Tierce 1 $\frac{3}{5}$ ', Cornet, Trompette 8', Clairon 4'

Pos. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Quarte de Nazard 2', Tierce 1 $\frac{3}{5}$ ', Cromorne 8'

Péd. Bourdon 16', Flûte 8', Gros Nazard 5 $\frac{1}{3}$ ', Flûte 4'

Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

m. 9 – G.-O./Péd.

Volume II

Date: December 29, 1980–March 20, 1981

Pieces: Récit de basse, Récit de basse et dessus, Fugue, Plein-Jeu (2), Récit de dessus, Récit en taille, Other (5)

2.1: Introduction sur les Pleins Jeux

Date: December 29, 1980

Classification: Plein jeu

Time signature: 4

Tempo: *Allant, mais pas trop vite* (moving along, but not too fast), m. 15: *Gravement* (slowly), m. 23: *a tempo allant, mais pas trop vite*

Original Registration:

Pos. | G.-O. Plein-Jeu + accoupl. | G-O/Pos.

Ped : pleine, sans Grosse Tierce, mais avec les anches et les tirasses (full, without Grosse Tierce, but with the reeds and the couplers)

Suggested Revised Registration:

G.-O. Bourdon 16', Montre 8', Prestant 4', Doublette 2', Fourniture, Cymbale
Pos. Bourdon 8', Dessus de Flûte 8', Prestant 4', Quarte 2', Fourniture, Cymbale
Péd. Bourdon 16', Flûte 8', Gros Nazard 5½', Flûte 4', Bombarde 16', Trompette 8'
Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.
Acc. Vent fort

2.2: Mouvement perpétuel

Date: January 10, 1981

Classification: Other

Time signature: unmetered

Tempo: *Très vite et égal* (Very fast and even)

Original Registration:

G.-O. : Bourdon 8', Doublette 2'
Pos. : Bourdon 8', Quarte de Nazard 2'
Ped : Bourdon 16', Flûte 4' [(seulement)]

Suggested Revised Registration:

G.-O. Bourdon 8', Doublette 2'
Pos. Bourdon 8', Quarte de Nazard 2'
Péd. Bourdon 16', Flûte 4'

2.3: Basse de Cromorne (I) Hommage à Clément Janequin

Date: January 3, 1981

Classification: Récit de basse

Time signature: 2

Tempo: ♩ = 72

Original Registration:

G.-O. : Montre 8', Bourdon 8'
Pos. : Prestant 4', Cromorne 8'

Suggested Revised Registration:

G.-O. Montre 8', Bourdon 8'
Pos. Prestant 4', Cromorne 8'

2.4: Récit de Tierce en taille (I)

Date: March 20, 1981

Classification: Récit en taille

Time signature: 4/4

Tempo: *Bien modéré* (Moderately)

Original Registration:

Réc : Bourdon 8'
Pos. : Bourdon 8', Dessus 8', Prestant 4', Quarte 2', Nazard 2⅔', Tierce 1⅓', Larigot 1⅓'
Péd : Bourdon 16' Flûte 8'

Suggested Revised Registration:

Réc. Bourdon 8'

Pos. Bourdon 8', Dessus de Flûte 8', Prestant 4', Quarte de Nazard 2', Nazard 2 $\frac{2}{3}$ ', Tierce 1 $\frac{3}{5}$ ', Larigot 1 $\frac{1}{3}$ '

Péd. Bourdon 16', Flûte 8'

2.5: Caprice en dialogue

Date: February 11, 1981

Classification: Other

Time signature: 4

Tempo: ♩ = 60–66

Original Registration:

G.-O. : Bourdon 16' + Doublette 2' [sans accouplement]

Pos. : Ouvert 8', Prestant 4' Bourdon 8' Cromorne 8'

Péd : Bombarde 16' Flûte 8' Clairon 4' [sans tirasses.]

Suggested Revised Registration:

G.-O. Bourdon 16', Doublette 2'

Pos. Bourdon 8', Dessus de Flûte 8', Prestant 4', Cromorne 8'

Péd. Bombarde 16', Flûte 8', Clairon 4'

2.6: Fugue grave sur les Prestants et toutes les anches

Date: February 5, 1981

Classification: Fugue

Time signature: 4

Tempo: ♩ = 44–50

Original Registration:

G.-O. et Pos. [les Prestants et toutes les anches] accoupl.

Péd : Fonds, anches ; tirasses.

Suggested Revised Registration:

G.-O. Prestant 4', Trompette 8', Clairon 4'

Pos. Prestant 4', Cromorne 8'

Péd. Bourdon 16', Flûte 8', Flûte 4', Trompette 8'

Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

2.7: Basse et dessus de Trompette (I)

Date: n. d.

Classification: Récit de basse et dessus

Time signature: 4

Tempo: ♩ = 108

Original Registration:

Pos: Dessus de Flûte 8', Bourdon 8', Quart de Nazard 2' Larigot 1½'

G.-O : Prestant 4', Trompette 8', Clairon 4'

Péd : Bourdon 16', Flûte 8', Tirasse /Pos.

m. 37 + Trem.

Suggested Revised Registration:

G.-O. Prestant 4', Trompette 8', Clairon 4'

Pos. Bourdon 8', Dessus de Flûte 8', Quarte de Nazard 2', Larigot 1½'

Péd. Bourdon 16', Flute 8'

Coup. Pos./Péd

m. 37 + Tremblant fort

2.8: Vibrations

Date: January 24, 1981

Classification: Other

Time signature: 8/8

Tempo: *Très lentement* (Very slowly)

Original Registration:

G.-O. Bourdon 8'

Pos. Bourdon 8'

Péd : Flute 4' + Grosse Tierce 3½' (seulement!)

Suggested Revised Registration:

G.-O. Bourdon 8'

Pos. Bourdon 8'

Péd. Flûte 4', Grosse Tierce 3½'

2.9: Clairon en taille

Date: March 27, 1981

Classification: Other

Time signature: 2/2

Tempo: ♩ = 84

Original Registration:

Pos : Bourdon 8' (seulement)

G-O : Bourdon 16' (seulement)

Péd. Clairon 4' (seulement)

Suggested Revised Registration:

G.-O. Bourdon 16'

Pos. Bourdon 8'

Péd. Clairon 4'

2.10: Monodie avec des timbres changeant

Date: January 29, 1981

Classification: Other

Time signature: 3/8

Tempo: *Presto, molto flessibile e legato*. (Fast, very flexible and legato)

Original Registration:

G.-O. Cymbale ½' (III) seule

- m. 1 + Fourniture 2' (IV-III)
- m. 3 + Bourdon 16'
- m. 4 + Prestant 4'
- m. 6 – Prestant 4' | – Fourniture
- m. 7 + Fourniture
- m. 9 + Doublette 2'
- m. 12 + Prestant 4'
- m. 13 + Bourdon 8'
- m. 14 + Montre 8'
- m. 17 + Clairon 4'
- m. 18 + Cornet V
- m. 24 + Trompette 8'
- m. 31 – Trompette 8'
- m. 33.1.2 – Clairon 4'
- m. 33.3 + Trompette 8'
- m. 34 + Clairon 4'
- m. 38 – Trompette 8' | – Clairon 4'
- m. 39 – Montre 8'
- m. 43 – Cornet V
- m. 45 – Prestant 4'
- m. 46 – Bourdon 8' | + Clairon 4'
- m. 49.1 – Clairon 4'
- m. 49.3 – Fourniture
- m. 50 – Doublette 2' (Bourdon 16 + Cymbale seulement)

Suggested Revised Registration:

G.-O. Cymbale

- m. 1 + Fourniture (h. d.)
- m. 3 + Bourdon 16'
- m. 4 + Prestant 4'
- m. 6 – Prestant 4', Fourniture
- m. 7 + Fourniture (h. d.)
- m. 9 + Doublette 2'
- m. 12 + Prestant 4'

m. 13 + Bourdon 8'
 m. 14 + Montre 8'
 m. 17 + Clairon 4'
 m. 18 + Cornet
 m. 24 + Trompette 8'
 m. 31 – Trompette 8'
 m. 33.1 – Clairon 4'
 m. 33.3 + Trompette 8'
 m. 34 + Clairon 4'
 m. 38 – Trompette 8', Clairon 4'
 m. 39 – Montre 8'
 m. 43 – Cornet V
 m. 45 – Prestant 4'
 m. 46 – Bourdon 8'
 + Clairon 4'
 m. 49.1 – Clairon 4'
 m. 49.3 – Fourniture
 m. 50 – Doublette 2'

2.11: Récit de Voix humaine

Date: January 28, 1981

Classification: Récit de basse et dessus

Time signature: 4/4

Tempo: ♩ = 60

Original Registration: G.-O : Bourdon 8', Prestant 4', Voix Humaine 8'

Pos : Bourdon 8', Dessus de Flute 8'

Ped. : Bourdon 16', Bourdon 8'

m. 28 + Tirasse G.-O.

m. 42 – Tirasse G.-O.

m. 82 D'ici, jusqu'à la fin, on peut réduire graduellement la pression de l'air en coupant le courant ou en poussant très lentement les registres. La pièce est terminée quand le son s'est évanoui. (From here one may lower the windpressure by switching off the motor, or by slowly pushing the stops. The piece is finished when no sound remains.)

Suggested Revised Registration:

G.-O. Bourdon 8', Prestant 4', Voix humaine 8'

Pos. Bourdon 8', Dessus de Flûte 8'

Péd. Bourdon 16', Bourdon 8'

m. 28 + G.-O./Péd.

m. 42 – G.-O./Péd.

m. 82 Motor off (or push all stops in slowly)

2.12: Épilogue en dialogue entre les Pleins-Jeux du Grand-Orgue et du Positif, et le Cornet du Récit

Date: January 25, 1981

Classification: Plein jeu

Time signature: 4

Tempo: ♩ = 84–92

Original Registration:

Récit Bourdon 8', Prestant 4', Cornet III.

G.-O. Plein Jeu, Pos. Plein Jeu | accoupl. G.-O/Pos.

Péd : pleine avec des anches | + Tirasse G.-O. et Pos.

m. 15 – Tirasse G.-O.

m. 45 + Tirasse G.-O

m. 49 G.-O. + Clairon 4'

m. 53 G.-O. + Trompette 8'

Suggested Revised Registration:

Réc. Bourdon 8', Prestant 4', Cornet

G.-O. Bourdon 16', Montre 8', Prestant 4', Doublette 2', Fourniture, Cymbale

Pos. Bourdon 8', Dessus de Flûte 8', Prestant 4', Quarte 2', Fourniture, Cymbale

Péd. Bourdon 16', Flûte 8', Gros Nazard 5⅓', Flûte 4', Grosse Tierce 3½', Bombarde 16', Trompette 8'

Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

Acc. Vent fort

m. 15 Péd. – Bombarde 16', Trompette 8'
– G.-O./Péd.

m. 23 Péd. + Bombarde 16', Trompette 8', Clairon 4'
+ G.-O./Péd.

m. 49 G.-O. + Clairon 4'

m. 53 G.-O. + Trompette 8'

Volume III

Date: December 5, 1980–March 6, 1981

Pieces: Récit de basse, Récit de basse et dessus, Grand-Jeu, Fugue, Plein jeu (2), Récit de dessus, Récit en taille, Other (4)

3.1: Prélude sur les Pleins Jeux

Date : n. d.

Classification: Plein jeu

Time signature: 4

Tempo: ♩ = 84–92

Original Registration:

G-O : | Pos : Plein-Jeu, accoupl.

Péd : pleine, sans Bombarde 16' | + Tirasse G.-O. et Pos.

m. 13 – Tirasse G.O.

m. 15 + Tirasse G.O.
 m. 19 + Bombarde 16'
 m. 35 – Bombarde 16', – Tir. G.-O.
 m. 38 + Tir. G.O.
 m. 39 + Bombarde 16'
 m. 57 + Trem.
 m. 65 – Trem.

Suggested Revised Registration:

G.-O. Bourdon 16', Montre 8', Prestant 4', Doublette 2', Fourniture, Cymbale
 Pos. Bourdon 8', Dessus de Flûte 8', Prestant 4', Quarte 2', Fourniture, Cymbale
 Péd. Bourdon 16', Flûte 8', Gros Nazard 5½', Flûte 4', Grosse Tierce 3½'
 Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.
 Acc. Vent fort

m. 13 – G.-O./Péd.
 m. 15 + G.-O./Péd.
 m. 19 Péd. + Bombarde 16'
 m. 35 Péd. – Bombarde 16'
 – G.-O./Péd.
 m. 38 + G.-O./Péd.
 m. 39 + Bombarde 16'
 m. 57 + Tremblant fort
 m. 65 – Tremblant fort

3.2: Répercussions

Date: n. d.

Classification: Other

Time signature: 2/2

Tempo : ♩ = 80–84

Original Registration:

Réc. Bourdon 8'*
 G.O. Bourdon 8'***
 Pos. Bourdon 8'***
 Ped Flûte 2'

* * * * * On peut combiner les Bourdons avec le Hautbois 8' (Récit), la Voix humaine 8' (G. O.) et le Cromorne 8' (Pos.) (sans ajouter quelque autre jeu à la pédale!) – The Bourdons can be combined with the Hautbois 8' (Récit), the Voix humaine 8' (G.-O.) and the Cromorne 8' (Pos.) (without adding any other stops to the pedal!)

Suggested Revised Registration:

Réc. Bourdon 8'
 G.-O. Bourdon 8'
 Pos. Bourdon 8'
 Péd. Flûte 2'

Notes:

- m. 24 In John Grew's recording, the E pedal note from m. 23 is held for 4 additional beats. The addition was at John Grew's request who believed that the two measures of rest were too long. Hambraeus wrote the added note into John Grew's personal copy and signed it "B. H."

3.3: Récit de Tierce en taille (II)

Date: December 13, 1980

Classification: Récit en taille

Time signature: 2/2

Tempo: *Très lentement*

Original Registration:

G-O : Bourdon 8', Montre 8'

Pos : Bourdon 8', Prestant 4' Nazard 2 $\frac{2}{3}$ ', Quarte 2' Tierce 1 $\frac{3}{5}$ ' Larigot 1 $\frac{1}{3}$ '

Ped : Bourdon 16', Flûte 8', Flûte 4'; tirasse G-O.

Suggested Revised Registration:

G.-O. Montre 8', Bourdon 8'

Pos. Bourdon 8', Dessus de flûte 8', Prestant 4', Nazard 2 $\frac{2}{3}$ ', Quarte 2', Tierce 1 $\frac{3}{5}$ ', Larigot 1 $\frac{1}{3}$ '

Péd. Bourdon 16', Flûte 8', Flûte 4'

Coup. G.-O./Péd.

3.4: Ronde des tierces en couple

Date: December 5, 1980

Classification: Other

Time signature: 2/2

Tempo: *Dansant; tempo di swing* (Dancing, swing tempo)

Registration:

G.-O. : Grosse Tierce 3 $\frac{1}{5}$ ' + Nazard 2 $\frac{2}{3}$ ' (seulement!)

Ped. Bourdon 16', Flûte 2' (seulement!)

- m. 13 [G.-O.] + Prestant 4' – Nazard 2 $\frac{2}{3}$ '
 m. 45 [G.-O.] – Prestant 4' | + Nazard 2 $\frac{2}{3}$ ' | + Trem.
 m. 82 Ped. + Grosse Tierce 3 $\frac{1}{5}$ '
 m. 85 [G.-O.] + 4'
 m. 102 – Trem. ;
 m. 103 [G.-O.] – 4'
 m. 105 Ped : – Grosse Tierce 3 $\frac{1}{5}$ '
 m. 109 [G.-O.] + 4', – 2 $\frac{2}{3}$ '
 m. 122 [G.-O.] + 2 $\frac{2}{3}$ '
 m. 131 Ped. + Grosse Tierce 3 $\frac{1}{5}$ '

Suggested Revised Registration:

G.-O. Grosse Tierce 3 $\frac{1}{5}$ ', Nazard 2 $\frac{2}{3}$ '

Péd. Bourdon 16', Flûte 2'

- m. 13 G.-O. + Prestant 4'
 – Nazard 2 $\frac{2}{3}$ '
 m. 45 G.-O. – Prestant 4'

+ Nazard $2\frac{2}{3}'$
 + Tremblant doux
 m. 82 Péd. + Grosse Tierce $3\frac{1}{5}'$
 m. 85 G.-O. + Prestant $4'$
 m. 102 – Tremblant doux
 m. 103 G.-O. – Prestant $4'$
 m. 105 Péd. – Grosse Tierce $3\frac{1}{5}'$
 m. 109 G.-O. + Prestant $4'$
 – Nazard $2\frac{2}{3}'$
 m. 122 G.-O. + Nazard $2\frac{2}{3}'$
 m. 131 Péd. + Grosse Tierce $3\frac{1}{5}'$

3.5: Trio

Date: March 2, 1981

Classification: Other

Time signature: 4

Tempo: ♩ = 58–60

Original Registration:

P[os]. : Bourdon $8'$, Dessus de Flûte $8'$

G.-O. : Bourdon $16'$, Prestant $4'$

Péd. Clairon $4'$ (ev. + Flûte $4'$)

m. 1.1.2 + Tremblant doux

Suggested Revised Registration:

G.-O. Bourdon $16'$, Prestant $4'$

Pos. Bourdon $8'$, Dessus de Flûte $8'$

Péd. Clairon $4'$

m. 1.1.2 + Tremblant doux

3.6: Les timbres irisés

Date: March 4, 1981

Classification: Plein jeu

Time signature: 4

Tempo: *Extrêmement lentement* (extremely slowly) (♩ = 36)

Registration:

Cette mesure commence en silence. Peu à peu on tire, dans cet ordre, très lentement à moitié seulement :

G.-O Bourdon $8'$, Cymbale, Prestant $4'$ Bourdon $16'$, Montre $8'$, Doublette $2'$, Fourniture

Péd : Flûte $2'$ (complètement tirée)

m. 40 Péd. + Bourdon $16'$

m. 43 Le Bourdon [$16'$ du pédale] est complètement tiré au début de la dernière mesure. Le poussez lentement (avec l'aide d'un assistant[]). Si l'on veut, on peut fermer tous les registres ainsi lentement dans l'ordre rétrograde du début. Push the Bourdon slowly during the last bar.

3.7: Basse et dessus de Trompette (II)

Date: February 1, 1981

Classification: Récit de basse et dessus

Time signature: 4/4

Tempo: ♩ = 63–66

Original Registration:

G.-O. : Bourdon 16', Prestant 4', Fourniture 2' IV/III, Trompette 8', Doublette 2'

Ped : Bourdon 16', Flûte 8', Bombarde 16' Flûte 4', Flûte 2' (sans tirasses)

m. 2 – Bombarde 16'
m. 7 + Bombarde 16'
m. 10.2 – Bombarde 16'
m. 10.3 + Trompette 8'
m. 10.4.2 – Trpt | – Bombarde
m. 20 + Bombarde 16'
m. 21 – Bombarde
m. 24 + Bombarde
m. 29 Ped. + Trompette 8'
m. 45.1 [G.-O.] + Clairon 4'
m. 45.3 Ped + Clairon 4'

Suggested Revised Registration:

G.-O. Bourdon 16', Prestant 4', Doublette 2', Fourniture (h. d.), Trompette 8'

Péd. Bourdon 16', Flûte 8, Flûte 4', Flûte 2', Bombarde 16'

m. 2 Péd. – Bombarde 16'
m. 7 Péd. + Bombarde 16'
m. 10.2 Péd. – Bombarde 16'
m. 10.3 Péd. + Trompette 8'
m. 10.4 Péd. – Trompette 8', Bombarde 16'
m. 20 Péd. + Bombarde 16'
m. 21 Péd. – Bombarde 16'
m. 24 Péd. + Bombarde 16'
m. 29 Ped. + Trompette 8'
m. 45.1 G.-O. + Clairon 4'
m. 45.3 Péd. + Clairon 4'

3.8: Fugue grave sur les fonds

Date: February 9, 1981

Classification: Fugue

Time signature: 4

Tempo: no indication

Original Registration:

G.-O | Pos Montre 8' Bourdon 8' Prestant 4' ; accoupl.

Ped : Bourdon 16' Flûte 8' ; Tirasses G.-O, Pos.

Suggested Revised Registration:

G.-O. Montre 8', Bourdon 8', Prestant 4'

Pos. Bourdon 8', Dessus de Flûte 8', Prestant 4'

Péd. Bourdon 16', Flûte 8'

Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

3.9: Basse de Cromorne (II)

Date: March 6, 1981

Classification: Récit de basse

Time signature: 8/8

Tempo: *Bien modéré. pas vite* (Moderately, not fast)

Original Registration:

G-O : Montre 8' Bourdon 8'

Pos : Prestant 4' Cromorne 8'.

Suggested Revised Registration:

G.-O. Montre 8', Bourdon 8'

Pos. Prestant 4', Cromorne 8'

3.10: Stratifications

Date: February 9, 1981

Classification: Other

Time signature: 4

Tempo: *Lentement (suivez les pulsations du son de la pédale!)* (Slowly, follow the pulsations of the pedal sound!)

Original Registration:

Pos. : Quarte de Nazard 2' (seulement)

G.-O. : Bourdon 8' (seulement)

Ped : Bourdon 16' (seulement)

m. 47 + Tirasse Pos.

m. 48 Pos. + Cymbale $\frac{1}{3}$ ' II

m. 66 Poussez très lentement le tirant de la Cymbale | – Tirasse Pos!

m.74 + Tremblant doux

Suggested Revised Registration:

G.-O. Bourdon 8'

Pos. Quarte de Nazard 2'

Péd. Bourdon 16'

m. 47 + Pos./Péd.

m. 48 Pos. + Cymbale

m. 66 – Pos./Péd.

– Cymbale (push in very slowly)

m.74 + Tremblant doux

3.11: Récit du Hautbois, du Jeu de Tierce, de la Voix humaine, et du Cornet

Date: February 22, 1981

Classification: Récit de basse et dessus

Time signature: 8/8

Tempo: *Lentement, mais toujours très chantant.* (Slowly but always very singing)

Original Registration:

Récit : Hautbois 8' (ev. + Prestant 4')

G.-O. : Prestant 4', Nazard 2 $\frac{2}{3}$ ', Doublette 2', Tierce 1 $\frac{3}{5}$ '

Pos : Bourdon 8', ([ev.] + Prestant 4')

Ped : Bourdon 16' Flûte 8'

- m. 20 G.-O. + Voix Humaine 8'
- m. 25 + Tirasse G.-O.
- m. 28 – Tirasse G.-O.
- m. 33 – Voix Humaine 8'
- m. 36 G.-O. + Cornet V
- m. 43.1 [G.-O.] – Cornet V | + Voix humaine 8.
- m. 43.4 [G.-O.] – Nazard 2 $\frac{2}{3}$ ' | – Prestant 4'
- m. 44.1 [G.-O.] – Tierce 1 $\frac{3}{5}$ '
- m. 44.3 [G.-O.] – Doublette 2'
- m. 45 Réc. – Prestant 4
- m. 47 Pos. : – Prestant 4' | Ped : – Flûte 8'

Suggested Revised Registration:

Réc. Hautbois 8', Prestant 4'

G.-O. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Doublette 2', Tierce 1 $\frac{3}{5}$ '

Pos. Bourdon 8', Prestant 4'

Péd. Bourdon 16', Flûte 8'

- m. 20 G.-O. + Voix humaine 8'
- m. 25 + G.-O./Péd
- m. 28 – G.-O./Péd
- m. 33 G.-O. – Voix humaine 8'
- m. 36 G.-O. + Cornet
- m. 43.1 G.-O. – Cornet
+ Voix humaine 8'
- m. 43.4 G.-O. – Prestant 4', Nazard 2 $\frac{2}{3}$ '
- m. 44.1 G.-O. – Tierce 1 $\frac{3}{5}$ '
- m. 44.3 G.-O. – Doublette 2'
- m. 45 Réc. – Prestant 4
- m. 47 Pos. – Prestant 4'
Péd. – Flûte 8'

3.12: Postlude sur les Grands-Jeux

Date: January 10, 1981

Classification: Grand jeu

Time signature: 6/4

Tempo: *Gravement* (Very slowly, solemnly)

Original Registration:

G.-O. et Pos (accoupl.) : Grands Jeux

Ped : Anches + Tirasse G.O. et Pos.

Suggested Revised Registration:

G.-O. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Doublette 2', Tierce 1 $\frac{3}{5}$ ', Cornet, Trompette 8', Clairon 4'

Pos. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Quarte de Nazard 2', Tierce 1 $\frac{3}{5}$ ', Cromorne 8'

Péd. Gros Nazard 5 $\frac{1}{3}$ ', Grosse Tierce 3 $\frac{1}{5}$ ', Bombarde 16', Trompette 8', Clairon 4'

Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

Volume IV

Date: November 1, 1980–March 12, 1981

Pieces: Récit de basse, Récit de basse et dessus, Duo, Fugue, Grand-Jeu (2), Récit en taille, Other (5)

4.1: Ouverture sur les Grands-Jeux

Date: November 1, 1980

Classification: Grand jeu

Time signature: 4

Tempo: ♩ = 60

Original Registration:

Pos : Grand Jeu

G-O : Grand Jeu : accoupl. Pos/G.-O.

Ped : Anches ; Flûte 4' et 2'. Tir. Pos.

m. 4 + G.O./Ped

m. 6 – G.O./Ped

m. 7.1 + G.O./Ped

m. 7.4.1 – G.O./Ped

m. 7.4.2 + Trem.

m. 10 – Trem.

m. 11 + G.O./Ped

m. 21 – G.O./Ped

m. 23 + G.O./Ped

m. 31 – G.O./Ped

m. 32 + G.O./Ped

m. 34 – G.O./Ped

m. 36 + G.O./Ped

m. 38.1 – G.O./Ped

m. 38.4.2 + Trem.

m. 40 – Trem. | + G.O./Ped

m. 50 – G.O./Ped
 m. 52 + G.O./Ped
 m. 57 – G.O./Ped
 m. 60 + G.O./Ped

Suggested Revised Registration:

G.-O. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Doublette 2', Tierce 1 $\frac{3}{5}$ ', Cornet, Trompette 8', Clairon 4'
 Pos. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Quarte de Nazard 2', Tierce 1 $\frac{3}{5}$ ', Cromorne 8'
 Péd. Bourdon 16', Flûte 8' Gros Nazard 5 $\frac{1}{3}$ ', Flûte 4', Grosse Tierce 3 $\frac{1}{5}$ '
 Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

m. 4 + G.O./Péd.
 m. 6 – G.O./Péd.
 m. 7.1 + G.O./Péd.
 m. 7.4.1 – G.O./Péd.
 m. 7.4.2 + Tremblant fort
 m. 10 – Tremblant fort
 m. 11 + G.O./Péd.
 m. 21 – G.O./Péd.
 m. 23 + G.O./Péd.
 m. 31 – G.O./Péd.
 m. 32 + G.O./Péd.
 m. 34 – G.O./Péd.
 m. 36 + G.O./Péd.
 m. 38.1 – G.O./Péd.
 m. 38.4.2 + Tremblant fort
 m. 40 – Tremblant fort
 + G.O./Péd.
 m. 50 – G.O./Péd.
 m. 52 + G.O./Péd.
 m. 57 – G.O./Péd.
 m. 60 + G.O./Péd.

4.2: Duo (canone al rovescio)

Date: November 5, 1980

Classification: Duo

Time signature: 2/2

Tempo: n. t.

Original Registration:

Pos : Dessus 8', Bourdon 8', Prestant 4' Nazard 2 $\frac{2}{3}$, Quarte 2' Tierce 1 $\frac{3}{5}$ '

G-O : Bourdon 16' Montre 8' Bourdon 8, Prestant 4', Tierce 3 $\frac{1}{5}$, Nazard 2 $\frac{2}{3}$ Tierce 1 $\frac{3}{5}$, Quarte 2'

Suggested Revised Registration:

G.-O. Bourdon 16', Montre 8', Bourdon 8', Prestant 4', Tierce 3 $\frac{1}{5}$ ', Nazard 2 $\frac{2}{3}$ ', Doublette 2', Tierce 1 $\frac{3}{5}$ '
 Pos. Bourdon 8', Dessus de flûte 8', Prestant 4', Nazard 2 $\frac{2}{3}$ ', Quarte de Nazard 2'. Tierce 1 $\frac{3}{5}$ '

4.3: Caprice sur les timbres de quinte et tierce

Date: December 23, 1980

Classification: Other

Time signature: 24/16

Tempo: Allegro

Original Registration:

G.-O Bourdon 16' + Nazard 2 $\frac{2}{3}$

m. 25.2 + Tierce 1 $\frac{3}{5}$ *

m. 25.3 – Nazard 2 $\frac{2}{3}$ *

*Tirez la Tierce et poussez le Nazard très lentement pour produire les microtons glissants ! // Pull the Tierce, et push the Nazard slowly to produce microtonal glissandi!

Suggested Revised Registration:

G.-O. Bourdon 16', Nazard 2 $\frac{2}{3}$ '

m. 25.2 + Tierce 1 $\frac{3}{5}$ *

m. 25.3 – Nazard 2 $\frac{2}{3}$ *

*As described above

4.4: Récit de Tierce en taille (III)

Date: November 12, 1980

Classification: Récit en taille

Time signature: 4

Tempo: Très lentement. (very slowly)

Registration:

G-O : Montre 8', Bourdon 8'

Pos : Bourdon 8' Prestant 4' Nazard 2 $\frac{2}{3}$, Quarte 2', Tierce 1 $\frac{3}{5}$ ' Larigot 1 $\frac{1}{3}$

Ped : Bourdon 16', Flûte 8 ; tirasse G-O

Suggested Revised Registration:

G.-O. Montre 8', Bourdon 8'

Pos. Bourdon 8', Dessus de flûte 8', Prestant 4', Nazard 2 $\frac{2}{3}$ ', Quarte 2', Tierce 1 $\frac{3}{5}$ ', Larigot 1 $\frac{1}{3}$ '

Péd. Bourdon 16', Flûte 8'

Coup. G.-O./Péd.

4.5: Basse de Cromorne (III)

Date: December 28, 1980

Classification: Récit de basse

Time signature: 4

Tempo: ♩ = 72

Original Registration:

G-O : Montre 8', Bourdon 8'

Pos : Prestant 4', Cromorne 8'

Suggested Revised Registration:

G.-O. Montre 8', Bourdon 8'

Pos. Bourdon 8', Prestant 4', Cromorne 8'

4.6: Récit de Mixtures

Date: December 29, 1980

Classification: Other

Time signature: 4

Tempo: ♩ = 60

Original Registration:

G.O. : Bourdon 16', Fourniture IV-III (2'); Tremblant (sempre !)

Ped : Bourdon 16', Tierce 3½', Flûte 2'

Pos. : Nas. 2⅔, Tierce 1⅔ (seulement !) + Trem.

m. 39 [Pos.] + Cymbale II (⅓')

m. 47 [G.-O.] + Tierce 3½'

m. 51 [G.-O.] – Tierce 3½'

Suggested Revised Registration:

G.-O. Bourdon 16', Fourniture (h. d.)

Pos. Nazard 2⅔, Tierce 1⅔

Péd. Bourdon 16', Tierce 3½', Flûte 2'

Acc. Tremblant doux

m. 39 Pos. + Cymbale

m. 47 G.-O. + Tierce 3½'

m. 51 G.-O. – Tierce 3½'

Notes:

m. 26 No need to write "+ Trem." for Redpath Hall organ (tremulant affects all divisions).

4.7: Basse et dessus de Trompette (III)

Date: December 15, 1980

Classification: Récit de basse

Time signature: 4

Tempo: ♩ = 56

Original Registration:

G-O : Prestant 4', Trompette 8', Clairon 4'

Pos : Bourdon 8', Dessus 8', Quarte 2', Larigot 1⅓'

Ped : not indicated

Suggested Revised Registration:

G.-O. Prestant 4', Trompette 8', Clairon 4'

Pos. Bourdon 8', Dessus de flûte 8', Quarte de Nazard 2', Larigot 1⅓'

Péd. Bourdon 16', Flûte 8'

Coup. Pos./Péd

4.8: Monodie sur le Grand-Jeu de Tierce

Date: March 3, 1981

Classification: Other

Time signature: 4

Tempo: ♩ = 58–60

Original Registration:

+Tremblant doux | G.-O. : Bourdon 16, Montre 8' Bourdon 8' Tierces $3\frac{1}{5}$ + $1\frac{1}{5}$ Doublette 2', Nazard $2\frac{2}{3}$ ', Prestant 4.

Ped : Bourdon 16', Gros Nazard $5\frac{1}{3}$ ', Grosse Tierce $3\frac{1}{5}$, Flûte 2 [sans tirasse!]

Suggested Revised Registration:

G.-O. Bourdon 16', Montre 8', Bourdon 8', Grosse Tierce $3\frac{1}{5}$ ', Prestant 4', Nazard $2\frac{2}{3}$ ', Doublette 2', Tierce $1\frac{3}{5}$ '

Péd. Bourdon 16', Gros Nazard $5\frac{1}{3}$ ', Grosse Tierce $3\frac{1}{5}$ ', Flûte 2'

Acc. Tremblant doux

4.9: Toccata sur les Plein-Jeux, et la Trompette du Grand-Orgue

Date: March 10, 1981

Classification: Plein jeu

Time signature: 4

Tempo: Vivacissimo

Original Registration:

Pleins-Jeux du G.-O. et Pos. | accoupl. G-O/Pos.

G.-O. : + Trompette 8'

Ped : Plein-Jeu, + anches et tirasses

m. 2 [G.-O.] – Trompette 8'

m. 12 G.-O. + Trompette 8'

m. 40 G.O – Trompette 8

m. 51 G.-O + Trompette 8, Clairon 4'

Suggested Revised Registration:

G.-O. Bourdon 16', Montre 8', Prestant 4', Doublette 2', Fourniture, Cymbale

Pos. Bourdon 8', Dessus de Flûte 8', Prestant 4', Quarte 2', Fourniture, Cymbale

Péd. Bombarde 16', Trompette 8', Clairon 4'

Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

Acc. Vent fort

m. 2 G.-O. – Trompette 8'

m. 12 G.-O. + Trompette 8'

m. 40 G.-O. – Trompette 8

m. 51 G.-O. + Trompette 8, Clairon 4'

4.10: Fugue sur les Pleins-Jeux, avec les anches

Date: March 12, 1981

Classification: Fugue

Time signature: 2/2

Tempo: ♩ = 92–96

Original Registration:

G.-O. | + Pos. : | accoupl. Pleins-Jeux, avec 16', et la Trompette du G.-O.

Ped : Plein-Jeu, avec les anches 16', 8', 4', et tirasses.

Suggested Revised Registration:

G.-O. Bourdon 16', Montre 8', Prestant 4', Doublette 2', Fourniture, Cymbale

Pos. Bourdon 8', Dessus de Flûte 8', Prestant 4', Quarte 2', Fourniture, Cymbale

Péd. Bombarde 16', Trompette 8', Clairon 4'

Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

Acc. Vent fort

4.11: Récit de Nazard

Date: January 6, 1981

Classification: Récit de dessus

Time signature: 4

Tempo: ♩ = 48

Original Registration:

G. O. Prestant 4' + Nazard 2⅔' (seulement)

Pos : Bourdon 8' (seulement)

Ped. Bourdon 16' ; Tirasse Pos.

Suggested Revised Registration:

G.-O. Bourdon 8'

Pos. Prestant 4', Nazard 2⅔'

Péd. Bourdon 16'

Coup. G.-O./Péd.

4.12: Finale sur les Grands-Jeux, en dialogue avec le Cornet de Récit

Date: December 15, 1980

Classification: Grand jeu

Time signature: 4

Tempo: ♩ = 60–66

Original Registration:

G.-O | Pos Grand-Jeu, accoupl.

Péd : plein sans Bombarde ; + Tirasses G.-O et Pos.

Réc. Bourdon 8', Prestant 4', Cornet III

m. 26 – Tirasse G.-O

m. 27 + Trem.
 m. 32 – Trem.
 m. 41 + Trem.
 m. 57 + Tirasse G.-O
 m. 58 – Tir. G-O
 m. 70 – Tremblant
 m. 105 + Tirasse G-O. ; + Bombarde
 m. 107 – Tir. G-O | – Bombarde
 m. 111 + Tir G.O | + Bombarde 16'

Suggested Revised Registration:

Réc. Bourdon 8', Prestant 4', Cornet
 G.-O. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Doublette 2', Tierce 1 $\frac{3}{5}$ ', Cornet, Trompette 8', Clairon 4'
 Pos. Prestant 4', Nazard 2 $\frac{2}{3}$ ', Quarte de Nazard 2', Tierce 1 $\frac{3}{5}$ ', Cromorne 8'
 Péd. Bourdon 16', Flûte 8' Gros Nazard 5 $\frac{1}{3}$ ', Flûte 4', Grosse Tierce 3 $\frac{1}{5}$ '
 Coup. Pos./G.-O., G.-O./Péd., Pos./Péd.

m. 26 – G.-O./Péd.
 m. 27 + Tremblant fort (with G.-O. chord)
 m. 32 – Tremblant fort
 m. 41 + Tremblant doux
 + G.-O./Péd.
 m. 58.2 + Tremblant fort
 m. 58.4 – G.-O./Péd.
 m. 59 – Tremblant fort (on release of chord at end of measure)
 m. 67 + Tremblant fort (on Pos. entry)
 m. 70 + G.-O./Péd.
 – Tremblant doux, Tremblant fort
 m. 78 Péd. + Trompette 8'
 – G.-O./Péd.
 m. 89 Péd. – Trompette 8'
 m. 92 + G.-O./Péd.
 m. 96 Péd. + Bombarde 16', Trompette 8'
 m. 107 Péd. – Bombarde 16', Trompette 8'
 – G.-O./Péd.
 m. 111 Péd. + Bombarde 16', Trompette 8', Clairon 4'
 + G.-O./Péd.