CENTRE DE
MUSIQUE BAROQUE
Versailles

Technical specifications N°3

FRENCH BASS VIOLIN (1610-1720)

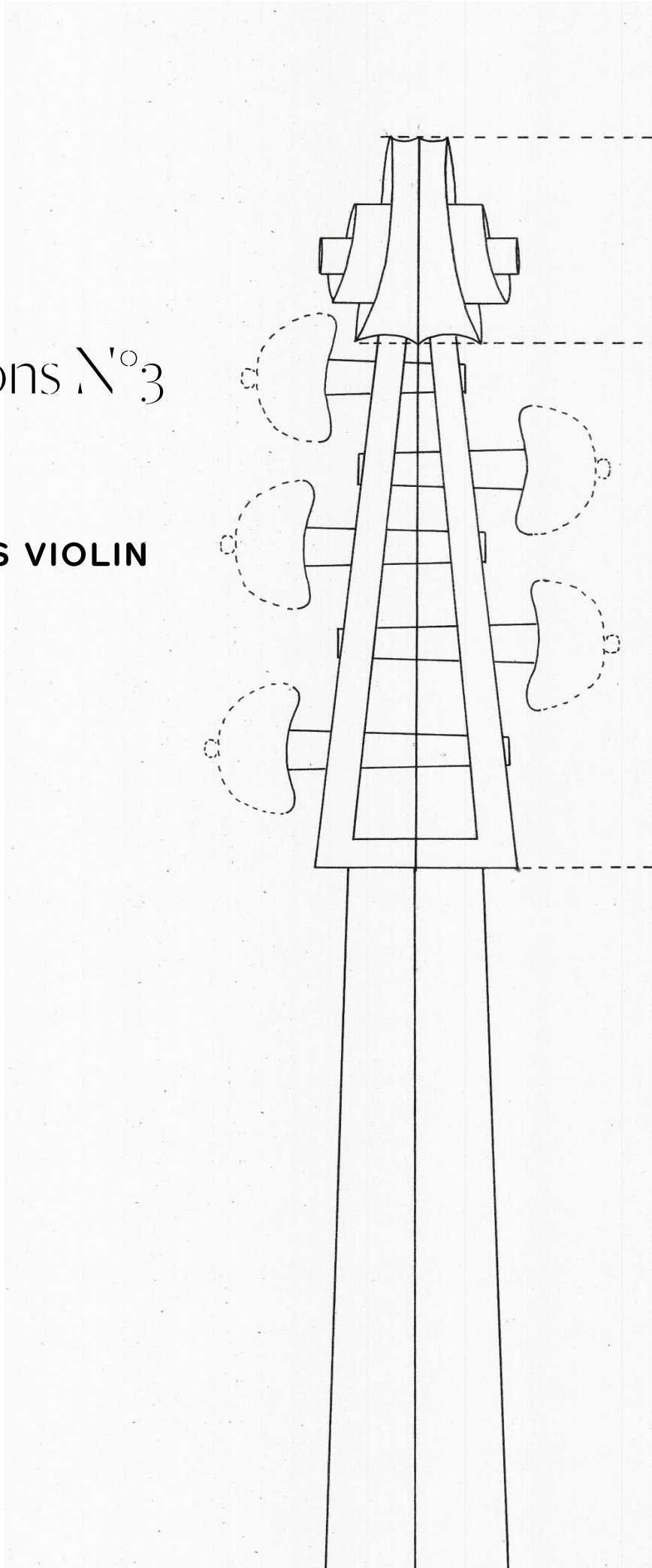

Image by Elize Naessens

An experimental bass violin with 5 strings

PREAMBLE

This specifications document no. 3 is part of the project "French bass violins (1610–1720)," initiated by the Centre de musique baroque de Versailles (CMBV). In the absence of reliable models (the few surviving five-string bass violins having often been converted into cellos), this reconstruction is, by its very nature, experimental.
Nevertheless, the existence of five-string instruments is attested in certain musical sources. The French composer Jean-Baptiste Matho (1663–1746) mentions the use of four five-string bass violins and four four-string bass violins in the scoring of his opera *Arion* (1714). Marc-Antoine Charpentier, in his *Sonate à huit*, composed between 1685 and 1690, specifies the following instrumentation: two German flutes, two violin « dessus », a bass viol, a five-string bass violin, a harpsichord, and a theorbo.
The instruments depicted in visual sources from the period show bass violins with varying morphological characteristics (different body widths and heights, short or long necks, and a number of strings generally ranging between four and five)[1].
For the construction of this bass violin, two models are to serve as the starting point for the work. The first instrument, preserved at the Musical Instruments Museum in Brussels (inv. 2876), is a five-string bass violin attributed to Hendrick Willems (1630–c. 1700). It may serve as a model for the dimensions of its body.
The second instrument, probably French and attributed to Jacques Boquay (c. 1680–1730), is preserved in a private collection. Now reduced and converted into a cello (see attached file), it possibly had body dimensions quite close to those of the model preserved in Brussels. The aesthetic and technical characteristics evoking the Parisian school of lutherie at the beginning of the eighteenth century should be incorporated into the instrument to be made (purfling, f-holes, rosette, scroll, etc.).
Furthermore, it appears essential that a constant dialogue be maintained between the luthier responsible for the construction of this experimental instrument and the members of the project's Scientific Committee.

As the project is supported by corporate sponsorship, the construction of the instrument must meet several criteria:

- Experimental reconstruction of an instrument based on historical sources and technical measurements, particularly for those parts of the instrument likely to have been altered.
- Construction without a mold, in accordance with 17th- and 18th-century workshop techniques (Article XI)
- Training and knowledge transmission through the integration of an apprentice into the construction process (Article IV).
- Complete documentation of the entire process (Article III).
- Building an instrument using a method without an internal mold requires adopting an approach in which asymmetry is not seen as a flaw but as a natural consequence of the technique itself. Every decision must be based on careful observation of the instrument—whether through images, measurements, material traces—or through direct experimentation in the workshop, in collaboration with a professional musician. The aim of the research is not perfect geometry; on the contrary, it seeks to highlight historical coherence and narrative.

The technique requiring the construction of the instrument without using an inner mold is mandatory for the creation of this instrument.

The instrumental collection project of the Centre de musique baroque de Versailles was made possible thanks to the support of the CMBV Endowment Fund and its patrons. The reconstruction of the bass violins

[1] Iconography list of the CMBV, available upon request.

of the « Vingt-quatre Violons du Roi » was made possible thanks to the support of Crédit Agricole Île-de-France and the Crédit Agricole Pays de France Foundation, the project's principal patron.

ARTICLE I: PURPOSE OF THIS SPECIFICATIONS DOCUMENT

In the absence of authenticated examples from the second half of the 17th century of these luthiers ' five-string instruments (notably because it is extremely difficult to distinguish between a five-string violin bass and a five-string piccolo cello), preserved in an unaltered state, this instrument must be considered a historical hypothesis. The choices for this experimental bass involve applying Willems ' structural language and Boquay's ornamental refinements to a configuration that meets the requirements of the early 18th-century French bass violin repertoire, as noted in the preamble.
Article II: General Principles for the Construction and Reconstruction of the Instrument

This specifications document is exclusively devoted to the description of an experimental French bass violin incorporating attributes from the H. Willems model (MIM no. 2876) as well as characteristics associated with French lutherie, such as those of J. Boquay, which will be detailed below. Furthermore, since this is a hypothetical instrument not derived from a single clearly identifiable source, it is essential that the luthier consult the committee and the CMBV before making any decisions throughout the construction process.

Willems Attributes (MIM no. 2876)

Regarding the attributes of the Willems instrument, the committee proposes taking into account the way the instrument was constructed (without a mold), its dimensions (noting that the back has not been reduced and that the neck is likely original), and the fact that it appears to be a five-string instrument.

Attributes of the French Parisian School of Lutherie (early 18th century)

The CMBV has conducted a study of the instrument currently preserved in a private collection (photographs, measurements, and surveys). The luthier may draw inspiration from the aesthetic characteristics visible on this instrument; however, it is essential that they also take into account other examples from this school of lutherie.
Its construction will rely on the use of materials similar to those of the original instruments, in accordance with the details provided in the appendix and in Article XI (particularly concerning ivory elements, paint, and varnish).
The reconstruction process may incorporate certain asymmetries or peculiarities of the original model, in keeping with the historical moldless construction techniques (see Article XI).
The luthier commits to applying all of their skills, workshop experience, and historical expertise to successfully carry out this reconstruction. The CMBV will make available all scientific, visual, and documentary resources in its possession at the time of signing this specifications document.
The major technical decisions established at the time of signing this document are detailed in Article XI.

ARTICLE III : CONSTRUCTION DOCUMENTATION

- The luthiers are requested to provide complete documentation upon delivery of the instrument, both in digital and paper format, detailing the construction of the instrument. This documentation must include at a minimum :
- A detailed description of the materials, tools, and techniques used, with a length of between 1,000 and 3,000 words (approximately 2 to 5 pages).
- Photographic documentation illustrating the main stages of the work, with at least 5 to 15 photos covering each key phase of the construction.

- A tracking sheet for the instruments provided, including recommendations for their maintenance and preservation, spanning 1 to 3 pages.
- One or more video or audio recordings of the main phases of the construction (minimum of 1 to 4 videos). In the case of recordings made with a mobile phone, filming in "landscape" orientation (phone held horizontally) is requested. This documentation will be partially made public on the CMBV website and its social media channels, in an internal workspace, in order to showcase and share the construction process.

ARTICLE IV: HOSTING AN APPRENTICE AS PART OF THE PROJECT

In addition to the technical requirements outlined above, each selected luthier is asked to host an apprentice as part of a mentorship carried out during the construction of the instruments. This mentorship reflects a strong commitment to the transmission of skills, supported by the project's patron and by the CMBV. The apprentice, whether at the beginning of their training or engaged in a specialization, will be selected in agreement with the luthiers. Special attention will be given to candidates from the Île-de-France region, without this being an absolute requirement. Financial arrangements may be determined on a case-by-case basis: the apprentice may be compensated either directly by the luthier or by the CMBV, depending on needs and budgetary considerations. The budget allocated to support this educational component, distributed according to the duration of the mentorship and the number of apprentices involved, may be discussed by the CMBV.
A written report will be requested from the apprentice at the end of the mentorship period, in order to document their experience and contribute to the project's record.

ARTICLE V: OVERSIGHT OF THE CONSTRUCTION

The luthier commits to reporting the progress of the work to the members of the steering committee according to a schedule agreed upon by both parties. Any technical decisions or modifications considered during the work must receive the approval of the steering committee.

ARTICLE VI: PERSON RESPONSIBLE FOR MONITORING AND ACCEPTANCE OF THE WORK

The services, as well as the acceptance of the work, will be carried out under the supervision of Adriana Isaku, project officer and coordinator of the "Bass Violin" project at the CMBV.

ARTICLE VII: RIGHTS

The photographs, negatives, and digital files provided in the documentation prepared by the luthier (Article III) may be used by the CMBV for publication and/or exhibition purposes, with the luthier transferring all of their rights. In return, any publication, communication, or dissemination by the CMBV on any medium that references the documentation prepared by the luthier under this contract must explicitly credit their name.

ARTICLE VIII: COMPLETION DEADLINE

The instrument must be delivered on the date agreed upon with the luthier at the time of signing the purchase order.

ARTICLE IX: PRICE

The prices set for this construction are final and not subject to revision. They are specified in the purchase order attached to this specifications document. The instrument must also be delivered in a playable condition, that is, with strings, which are not provided by the CMBV.

ARTICLE X: TRANSFER OF OWNERSHIP

The luthier retains ownership of the said goods until full and effective payment of the price by the CMBV.

ARTICLE XI: TECHNICAL CHOICES

This guide presents a manufacturing method based on the study of historical sources, practical workshop experience, and technical analysis (including 3D scans) of original instruments preserved at the Musical Instruments Museum in Brussels (MIM). It is a mold-free approach, in which construction begins from the bottom of the instrument, using a process faithful to ancient practices.

Construction sequence and methodological principles

1. Construction begins with the bottom of the instrument, which forms the base of the assembly

2. Small grooves are cut into the edges of the bottom to accommodate the ribs (these grooves resemble channels for string, but are not positioned in the same place in order to preserve the strength of the wood).

3. The ribs are bent by hand, without a mold, until they fit naturally into the grooves. This method can result in partial asymmetry in the contours of the top, which is normal and contributes to the aesthetic appeal of this type of instrument.

4. First the head and heel. Before attaching the ribs, the neck, made in one piece, is glued directly onto the back. Next, the ribs are adjusted into the grooves and into the neck block. The top is drawn based on the actual outline formed by the ribs in place, which means that the shape is rarely perfectly symmetrical.

Wood and choice of materials

The choice of materials may be inspired by Willems' instruments or those of Boquay, to be discussed with the CMBV and the committee.

Construction details by element

1. Back
Symmetrical back, shape reconstructed from photos and scans

2. Volute
To be reconstructed based on other volutes attributed to Boquay or other french instrument makers from the same time.

3. Angle and heel of the neck
To be discussed with the CMBV, committee, and luthier.

4. Length of the neck
Based on the Willems fingerboard model, but with a fingerboard (and neck) that may be wider to accommodate the five strings.

5. Ribs
The height of the ribs can be based on the Willems model, or on the "Boquay" model if it is possible to reconstruct the original dimensions. This subject can be discussed between the CMBV, the committee, and the luthier.

7. Harmony bar
To be observed on instruments and discussed with the CMBV, Committee, and luthier.

Final adjustments and sound projection:

8. Bridge
The bridge will have an experimental position to be determined, but must be based on:

a) The list with iconographic representations produced by the CMBV
b) The proportions (vibrating string, body)
c) The visible marks on the instruments (bridge footprints, internal marks)

9. Sound post
Will depend on the final position of the bridge and its placement; these points will need to be discussed with the committee.

REMOVABLE PARTS

10. Tailpiece
The tailpiece should be based on the list of iconographic sources compiled by the CMBV and be consistent with the chronological and geographical context of the original instrument.

11. Button
A button allowing the insertion of one or more wooden pegs of different lengths will be necessary.

12. Picks
Several wooden picks will need to be made for the instrument to allow for a greater variety of playing styles.

13. Pegs
It is essential that the peg box provide sufficient space to accommodate a pure gut B flat string, and it is essential that the pegs be spaced far enough apart to allow for comfortable handling by hand during tuning.

DECORATIVE ASPECTS AND VARNISHES:

14. Varnish
The varnish should, as much as possible, resemble that of Boquay's original instrument or the aesthetic of a French instrument.

15. Painting
Although one of the reference examples associated with Boquay's attributes features painted decoration, this instrument will not incorporate this type of ornamentation.

16. Ivory
As the original instrument does not contain any ivory, no ivory elements are required.

Luthier:
Last name:
First name:
Date:

Price of the instrument:
Delivery date:

Signature
(Preceded by the words "read and approved")