

## ***Criteria to Consider when Planning Methodology and Approach in Intervention on Historic Instruments***

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*The projected extent of intervention, and the decision whether to bring a historical musical instrument into a playable state, are dependent upon the physical condition of the instrument, the feasibility of full restoration and, most importantly, any previous interventions that the instrument may have undergone. Knowledge of the previous working history of the instrument is essential in deciding future treatment protocols. If an instrument has been in use for centuries, as is the case with bowed string instruments, there is little chance that further restoration will have an impact on its historical aspects. On the other hand, if an instrument is in essentially original condition, intervention must be far more circumspect. Three case studies are presented, one showing a repeated history of interventions to maintain working state, and the others demonstrating the need for caution when dealing with an instrument still in its original state.*

### **Introduction**

The projected extent of intervention, and the decision whether to bring a historical musical instrument into a playable state, are dependent upon the physical condition of the instrument, the feasibility of full restoration and, most importantly, the physical state of the instrument; i.e. any previous interventions that it may have undergone. Knowledge of the previous working history of the instrument is essential in deciding future treatment protocols. If an instrument has been in use for centuries, as is the case with many bowed string instruments, there is little chance that further restoration will have an impact on its historical aspects. On the other hand, if an instrument is in essentially original condition, intervention must be far more circumspect. We all know examples of historic instruments that have been restored to working condition without attention to these factors, and as museum personnel it is incumbent on us to do as much as we can to protect a diminishing cultural heritage.

I would like to start by looking at the criteria for deciding the degree and extent of intervention, then follow with some case studies of instruments that have been restored. This will be a quick review of the criteria, because to a large extent they have been established for some time and are well understood by us. In addition, other presenters at this colloquium will deal with some of them in more detail.

### **Criteria for Restoration**

- Physical condition of the instrument
- Feasibility of restoration
- Physical state of the instrument (previous interventions)

### **Physical Condition**

- Condition of structural parts
- Condition of acoustic parts
- Condition of working components (mechanical)
- Completeness

The extent of intervention necessary is dependent upon the condition of the wooden components, structural, acoustic and mechanical. We know that over time wood can deteriorate due to fluctuations in relative humidity, continued stress under tension or compression, and chemical and biological degradation. The result is that parts may need consolidation, reinforcement or, in extreme cases, complete replacement. What are the implications in whatever approach we chose? Also, there may be pieces completely missing. Do we know with any certainty the dimensions and type of wood of these missing parts? And, most important, do we know the acoustic and mechanical effect these changes will have on the performance of the instrument?

### **Feasibility of Restoration**

- What techniques are required?
- What facilities are required?
- Is the needed expertise available?

These are questions that are answered on a case-by-case basis. No two instruments present the same problems, and no two institutions have the same facilities and expertise on hand. It is not within the range of this presentation to itemize all the criteria required for a professional restoration under museum conditions.

### **Physical State (Previous Interventions)**

- Originality of the instrument
- Number of previous interventions
- Quality of previous interventions

Notice that I make a distinction between «condition » and « state ». In English, this is a large problem because the two words are used interchangeably, and there is much confusion in the conservation profession. In French I think the problem is less extreme, and you understand that « condition » refers to the materials, and « state » refers to the disposition of the components. As an example, a Stradivari violin that has been restored many times over 250 years may be in excellent condition, but its state is far away from the original.

Here, in my opinion, is the main area of concern for intervention in the museum context. The field of musical instrument conservation and restoration has developed over the last 40 years to the point that we know the answers to the questions of condition, facilities and techniques. Much has been published, many conferences and meetings have been held, and we can now feel confident in our technical knowledge. This does not imply that we should relax and do no more research, but it does indicate that we have reached a level of expertise where we may consider ourselves competent and knowledgeable in making technical decisions. However, where I think more work needs to be done is in the decision-making process related to the history of the instrument, what interventions it has undergone, and the quality of those interventions. Only when we have control over our knowledge of the past can we project an instrument safely into the future. I have published a little on this subject, but there is room for a lot more research. I would like to call your attention to the work of John Watson at Colonial Williamsburg in Virginia, USA. He is doing some excellent research into the social/historical aspects of musical instrument restoration, and I can recommend his publications highly.

### **Case Studies**

- Amati violin
- English square piano
- Mediaeval citole

I would like to show some case studies and indicate aspects of the interventions that have an impact upon the instruments' previous history of intervention. In each case I will examine the decision-making process that led to the intervention, and highlight areas of interest to us, as museum professionals. Two of these case studies appear in greater detail in my book *The Preservation and Use of Historic Musical Instruments*.

### **Amati Violins**

There are several categories of musical instruments that continue in use and whose obsolescence is deferred by continual maintenance and alteration to suit changes in musical fashion and natural degradation of materials. Maintaining the playing qualities of bowed string instruments over decades and centuries of use is a highly refined discipline with stringent standards and intensive training. The key issue for the owner and user of such an instrument is its capability of being played.

In the case of this quartet of Amati instruments, owned by the University of Saskatchewan, Canada, there was debate over whether to continue their use as working musical instruments in the hands of a string quartet, or to retire them to the safety of a museum-style display case. When deciding on the future of instruments like these, the first consideration is physical condition. How capable are the instruments of withstanding the rigors of continual use? These are questions best answered by professional string instrument restorers. As museum

professionals we go beyond their everyday function to enquire about their historical attributes. What can the instruments tell us of Amati's times, and the periods since then? There are three factors that alter instruments irreversibly over time:

### **Three Factors**

- Deterioration
- Changes in musical fashion
- Maintenance

We have already discussed deterioration of wood due to fluctuations in relative humidity, continued stress under tension or compression, and chemical and biological degradation. So here we will look at the second and third factors, changes in musical fashion and maintenance.

### **Changes in Musical Fashion: the Violin Neck**

- a. Original form
- b. Intermediate form
- c. Modern form

We know that very few violins of the classic period have their original necks. Musical fashion has dictated their removal and replacement. The effect on the acoustics and playing quality of the instruments is, of course, profound. Thus, the acoustic performance today of a 17<sup>th</sup> century violin can tell us absolutely nothing about its original sound. As a study piece for early acoustics it is therefore useless.

### **Maintenance: Interior of an Amati**

- 56 buttons glued over cracks
- Circular patch top, treble side
- Longer and deeper bass bar
- Soundpost location strengthened
- F-holes patched = renfort des ouïes
- Circular patch bottom, treble side
- Circular patch bottom, bass side

Now, looking at the interior we can see a great deal of intervention, all of which contributes to permanent changes in the instrument's musical character. Again, such changes ensure that nothing can be learned of Amati's milieu from the sound this instrument would make. Its value as a study piece for early music has long since passed. One would not dream of restoring an instrument with such a long technical history back to its original state, although this actually has been done to a Stradivari violin under the auspices of a museum.

### **Potential Alterations: Parts Changed or Substituted**

This picture emphasizes the potential for change that all classic violins embody. I am not saying that all these changes will take place, but many can. As an example, Pinchas Zukerman has a violin that contains parts from instruments made by three members of the Guarneri family.

#### **Summary**

- Maintain working state
- Preserve tradition of use
- Tradition is valued higher than material

This case study shows us that if we keep these instruments in working state, we will be preserving the tradition of their use. The conservation of the continuing tradition of playing these instruments has much higher value than the conservation of their physical wooden parts.

### **English Square Piano**

This instrument was made by Johannes Zumpe in 1766 and is probably the earliest English piano. It was in remarkably original state before an intervention some 20 years ago, having all its original parts including a three-ply soundboard, a rarity in keyboard instruments of any period. It was restored in the 1980s to a playable state, which involved removal of the soundboard and its replacement with a conventional single-ply one. The wooden case of the instrument twisted badly from corner to corner under tension. Even though an aluminium reinforcement bar was underneath with screw, the problem was not solved. Tuning continued to be a problem, and successive regimens of string tension were tried to stabilize it. The piano was played in one concert, and then retired to storage. The concert was not recorded.

#### **Summary**

- Original state intact
- Musical state is valued higher than history
- Musical results ephemeral and not recorded

This case study is absolutely opposite from the previous one. In this case, the instrument had a great deal to tell us about its original state, and with care much of that information could have been extracted. It is questionable whether the musical state was ever achievable without compromise to the historical state, but the point is that the musical state was considered much more important, and the desire to hear the instrument outweighed historic considerations. Indeed, what use is the musical result if it is achieved with a new and completely different soundboard, the heart and soul of any instrument? So now, the piano is silent – both its historical and musical voices lost.

### **Mediaeval Citole**

An instrument now owned by The British Museum. It was used by Queen Elizabeth I, when it was probably converted from plucked to bowed. This is one of very few extant mediaeval instruments, dating between 1280 and 1330. It survived because of the quality of its carved decoration, its use in the 16<sup>th</sup> century by Queen Elizabeth I of England and Robert Dudley the Earl of Leicester, and because it was capable of modification in reaction to changing musical fashion. The connection with Elizabeth I exists in a silver plate covering the peg-box which is engraved with the arms of Elizabeth and Dudley. This was attached in 1578 when the citole was converted into a violin. There is much evidence of later interventions, perhaps in the 18<sup>th</sup> century when attempts seem to have been made to make the instrument play better. However, as a violin its musical function is very limited by the strange arrangement of the neck and the solidity of construction. From this time onward it became more an object of decorative and historic value than a functioning musical instrument.

### **Summary**

- Changed from original state
- Musical state less value than historical information
- Playable state for display only

Like the Amati violins, this instrument has seen perhaps centuries of use and conversion to adapt to changing musical fashion. Where it differs is in its rarity and the fact that, in its present state, it can tell us nothing musically about its existence as a citole, a plucked string instrument. So, even though waves of intervention have passed over the instrument, any intervention to render it playable will have limited music-historical value. It could, however, be put into a state of apparent playability so that as a display object the museum visitor would be given a full visual interpretation of its function.

I am very grateful to the Conservation Department of the British Museum for permission to show these pictures.

### **Conclusions**

- The musical voice:
  - easy to hear
  - easy to find
- The historical voice:
  - faint and confused
  - difficult to 'hear'

As I said in my introduction, we all know examples of historic instruments that have been restored to working condition without attention to their past histories, and as museum personnel it is incumbent on us to do as much as we can to protect a diminishing cultural heritage. At the same time, there is our present

desire to evoke the musical voice of historic instruments. As my colleague John Watson has argued, instruments have both a historical voice and a musical voice, and it is often the case that the musical voice is considered the most important. A balance needs to be achieved so that we can 'hear' both. The musical voice is comparatively easy to achieve, but the historical voice is often faint and confused.

Consultation with specialists:

- Conservators
- Restorers
- Curators
- Music historians
- Instrument makers

Projected conservation/restoration projects on historic instruments should be a place for a meeting of minds. Our conservation codes of ethics state that wide consultation is necessary, and there is no project more important than a musical instrument that has its history written on it and within it, for those who are equipped to read it. Consultation between conservators, restorers, curators, music historians and instrument makers will ensure that all efforts are made to extract that historical voice.

That is why meetings such as this one are so important. They provide the forum for professionals in the field to compare approaches and exchange ideas. As a side note, the *Cité de la musique* is to be congratulated as being one of the few institutions in the world that makes meetings such as this one an important part of its mandate, and which also supports them so well financially. All of us here should be very grateful for this.

## **Bibliography**

Barclay, Robert, *Preservation and use of historic musical instruments*. Earthscan Publications Ltd. (December 2004)

## **Biography**

Robert Barclay was trained as a conservator at the Canadian Conservation Institute. He has a certificate in Science Laboratory Technology from the City and Guilds of London, a Bachelor of Arts degree from the University of Toronto, and a Doctorate of Philosophy from the Open University in the UK. He retired from the CCI recently after 32 years of service. His publications include works on the care and preservation of historic musical instruments, studies on early musical instrument technology, and several scientific examinations of conservation techniques.