The question arises as to why Riesener used some of these features. For example, it would have been easier for him to use one single door that stretched all the way across the front of the piece. This would place the hinges on one side of the cabinet/door, and the locking mechanism on the other, just as Chippendale did on his two secrétaires. While it is only speculation, but security is probably one reason for this. A lock that was accessible to the edge of a piece is easier to pry open. The tongue and groove arrangement prevents the insertion of a sharp object between the two doors and the use of a spring-loaded lock also helped to reduce the possibility of manipulating the lock. As will be discussed below, security appeared to be an important issue to Riesener.

**Security:** Without a doubt Riesener, was more concerned with security for his secrétaires than Chippendale was for his furniture. As discussed earlier, this seemed to be an issue with French society. In England this appeared less important. Chippendale for

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158 C. Sargentson, Looking at Furniture Inside Out: Strategies of Secrecy and Security in Eighteenth-Century French Furniture, found in D. Goodman and K. Norberg, (eds), *Furnishing the Eighteenth Century: What Furniture Can Tell us about the European and American Past*, Routledge, London, 2007, pp. 205-237. It should also be pointed out that Louis XVI and Marie Antoinette were also thought to have taken a keen interest in
example, used the same, fairly simple locking mechanism on nearly all of his library tables; this included the Harewood Library Table, Chippendale’s most elaborate library table. By contrast, Riesener applied a range of very elaborate locking mechanisms to his furniture. Some locks were spring-loaded; nearly all required double turns to completely lock them completely, resulting in bolts that extended much further than any of the locks on the Chippendale pieces. These bolts were also thicker and heavier than those seen on Chippendale. On the abattant and the safe, Riesener’s pieces sometimes had multiple bolts emanating from them – some extending out of the top of the door, others extending out of the sides. Furthermore, Riesener’s furniture frequently required multiple keys and the keys themselves were more elaborately cut than on Chippendale’s furniture. Most of Riesener’s secrétaire à abattants also had what are commonly called ‘safes’ in the lower section; these ‘safes’ were compartments with heavy solid oak doors, generally tighter seals around the inside of the compartment and made use of different keys than those used to open the rest of the furniture.

While F302 used some of these features, it did not use all of them. In fact this piece, relative to other pieces made by Riesener and other French furniture makers had a fairly simple locking mechanism; while there was a double bolt in the top of the abattant lock, there were no side locks for example – as seen on F300 or the Waddesdon Manor example. Similarly, while it had a safe and it did have a special lock, it did not make use of the kind of bolts found on the F300 and the Waddesdon Manor Secrétaire à abattant. However, despite its simplicity relative to other Riesener pieces of furniture, the F302 is more complicated than what one could argue was the most advanced example of English complex mechanical devices which contributed to their wanting more complex locks. However the inclusion of safes, secret compartments as well as the complex locking mechanism makes security appear to be the more important driver for these complex locking systems.

This conclusion is only based on a personal observation that there appeared to be less effort by the cabinetmaker to make the furniture more secure. While there was probably a concern in England about security of documents, money and other valuables, as there are examples of furniture in England with hidden compartments, strong locks, etc, it appears that they were less frequent as on French furniture from the period. Limiting this observation to the furniture made by Chippendale and Riesener it is clear that Chippendale was not as concerned with security as was Riesener, suggesting that Chippendale’s clients were less concerned.

Chippendale, as seen earlier used one long door that reached all the way across the front of his secrétaire à abattant (See Appendix C, page 469). Another approach used by Riesener was to use a levered door that slide out from a slot on the left side to form a door across the entire Lower Storage Section.

Many of them had fronts that looked like drawers for additional security.
furniture – the Harewood Library Table. In order to lock the top drawer of the F302 for example, Riesener created a unique solution. On nearly all other Riesener secrétaire à abattants included in this research, this drawer was locked using the mechanism located on the fall front - essentially, the lock on the fall front has a double bolt long enough to reach through the shelf that separates the two sections and into the bottom of the top drawer. The person locking the secrétaire would turn the key on the fall front once and that would lock the Abattant Section. When they turned the key a second time, they would lock both the Abattant Section and the top drawer (with one turn the two bolts extended approximately 1.5 cm and the second turn extended the bolts out approximately 3.0 cm.) - see Figures 5-60 and 5-61. On the following page are examples of how the bolts extended out two different levels on the fall front for F300 (Figure 5-61).

In Figure 5-62, the internal view of the lock for F300 is shown. This shows how the lock was able to execute the different bolts and locking mechanisms. While the lock for F302 was not this complicated, it was similar in its basic constructions. While F302 had two bolts that exited through the top, the lock for F300 had a double-barrelled bolt, together with a spring-loaded lock, two side bolts and an extension through the bottom of the lock.\(^\text{162}\)

While the bolts extending out of the sides were designed to enhance the security of the abattant, the one from the bottom was used to open up a secret compartment.

\(^{162}\) In order to execute this complicated locking mechanism, Riesener’s workshop had to carve out the space for the lock as well as the ‘trenches’ for the different extensions such as the side bolts and the bolt on the bottom of the lock.
Figure 5-59: The bottom plates for the locks, the first (on the left) is at the top of the Fall Front Section, the second (on the right) is the views of the same shelf from the top.

Figure 5-60: This is the bottom of the top drawer, showing where one of the bolts enters to hold the drawer closed.
Figure 5-61: Two pictures showing how the double turn, double-barrelled lock on the abattant of one of Riesener’s secrétaires work. The top picture shows the bolts partially extended after one turn of the key. The lower picture shows how they were fully extended. Notice also to the left of the two bolts is the spring-loaded bolt. These photographs were based on the Waddesdon Manor secrétaire à abattant, however all other secrétaire à abattant explored in this thesis had similar locks on the abattant except for the one at Versailles.
Mechanism to extend double bolt through the top of fall front.

Spring loaded latch to hold door closed without locking the *secrétaire à abattant*

Extensions to bolt the fall front on each side.

Extension to open the secret compartment.

Figure 5-62: Internal view of lock for Riesener’s *Secrétaire à abattant* F300, showing the key features.
To open this secret compartment in the main part of the Fall Front Section in F300, the key had to be turned a third time, in order to operate this spring loaded mechanism.

The safe on F302 was locked with a relatively simple lock that extended two bolts through the top of the door into the bottom of the shelf immediately above it. As with other locks it required two turns to extend these bolts their entire length (See Figure 5-61). It should be pointed out that there were several examples where the security of the lower section was taken to even more extreme that on F302. For example, the Waddesdon Manor secrétaire had a similar type of lock on the lower section as it did on the upper fall front door. In this example had the lock to the safe had bolts which exited both sides of the door, as well as the top. None of the Chippendale pieces examined in this research afforded a safe of any kind.

Figure 5-63: Two different locks for the safes on Riesener secrétaire à abattant. On the left is the lock for F302; the one on the right is for the Waddesdon Manor secrétaire, which is exactly the same for F300.

The security for the Chippendale secretaire was not nearly as elaborate, with three small locks were used to lock its three different sections. There were no secret compartments; no double bolt locks that allowed for extra long extensions on the bolts; the lower door did not have tongue and groove joints or a spring loaded lock; nor was there a safe. Similarly, the Harewood Library Table made use of one type of lock, used for each of the drawers. However, there were a larger number of locks. There was one lock was located on each of the corner drawers and on the centre front drawer, then one on each door – nine in total.
Despite the large number, each used the same lock type and needed only one key. The key operated with a single turn, turning bolts which were short relative to the locks used by Riesener on F302.

F. Materials Used for these Two Pieces of Furniture

This section compares the materials that were used on these two pieces of furniture wherever possible. In cases where further examination was deemed necessary to properly identify materials, the best guess is offered along with some suggestions regarding further testing.

Wood: Let us begin by looking at the woods that the two makers used for their structural components and the carcase. Chippendale used oak and some type of a softwood (probably what was commonly called deal - discussed later - See p. 281.) on the Harewood Library Table. Oak was used for the inside of the drawer cavities, the lower sections of the file dividers, the walls of the pedestals, and the top. Deal was used for the top and bottom of the pedestals and the top of the upper drawer cavities. This use of materials was typical of most of Chippendale’s work with the notable exception of the ladies secretaries.

163 Quercus robur - English oak or Quercus Sessiflora – European oak. According to notes in the files at Temple Newsam, English furniture makers preferred to use the European oak from central Germany (the so called ‘wainscot’) because it was of a better cut, had fewer knots and more stable than the English variety. In part this, the paper suggested because so much of it was used to build houses and ships. No Author Given, Temple Newsom Files, Outside of Leeds, UK Accessed between 5 February 2007 and 29 September 2009.
164 While Chippendale was a frequent user of solid mahogany on his furniture, he did not on this particular piece. Instead on this piece he only used oak on the doors and the drawer fronts. This is different to what Riesener did on this piece (he only used mahogany on the drawer fronts). This runs counter to the belief by some that mahogany’s use was considered to be much more limited in France. A visitor to England in 1784, François de la Rochefoucauld, illustrates this point as he concluded that England must be wealthier than France simply because of the amount of mahogany that was used:

“It is remarkable that the English are so much given to the use of mahogany; not only are their tables generally made of it, but also their doors, and seats and the handrails of their staircases. Yet it is just as dear in England as in France. It is a matter which I do not pretend to understand, but I am inclined to think that the English must be richer than we are....”

(F. Rocheffoucauld (Translated by S.C. Roberts), A Frenchman in England, Cambridge University Press, Cambridge, UK, 1933 (Original published in 1784), p. 30.) This suggests a few things; First of all that England was using mahogany more frequently than France (implying that it was more available and less expensive in England) and that Rocheffoucauld had high regards for the wood and that in France mahogany was too expensive to use as often.
which currently resides in Harewood House, where Chippendale used deal to construct the sides of the lower section. We also know that in the case of the Harewood Library Table, that deal was used to build plinth that covered the casters we do not know if this were the case for the other Library Tables (See Figure 5-15).

One might assume that the oak used on the Harewood table desk was from England, as there was an abundance supply in Britain at this time. However, the oak preferred by London cabinetmakers was a variety from Europe, referred to as wainscot. This variety (Quercus sessiflora) came from Germany, Poland or Prussia via the Baltic Sea. The deal was also probably imported from Europe and would have been one of a number of different conifers such as Scots pine (Pinus sylvestris), Larch (Larix decidua), or Norwegian Spruce (sometimes called White Deal - Picea abies). Spruce was generally favoured by cabinetmakers, as it was paler, softer and less resinous. Given the quality of this piece, the colour of the pine and the lack of resin, it seems reasonable to assume that the conifer used in the Harewood Library Table is Norwegian Spruce.

Riesener’s only used oak or chêne (This variety is also probably the white European oak that was used in England - Quercus sessiflora) as his construction. Oak was used for the framing and the carcase work onto which the outside decoration (veneers and ormolu) was attached and for the inside of drawer cavities and feet - see Appendices D and E. As described above, there were a few cases where Riesener used a harder and smoother wood.

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165 On some pieces, the primary show wood was mahogany, but still Chippendale used oak and a type of conifer on the hidden structural components.
168 There were several sources of information that were used in this effort. Obviously the catalogues of furniture at The Wallace Collection (F. Watson, Wallace Collection Catalogues. Furniture and P. Hughes, The Wallace Collection Catalogue of Furniture, Vol II.), but in addition there was Roubo’s text (see A. Roubo, l’Art Du Menuisier ) written at the time and an analysis of the Roubo list of furniture woods. (P. Détienne, Les Bois Exotiques Décrits par Roubo, en 1774, Bois et Forêts de Tropiques, No 274 (4), 2002, pp. 89-96.). The primary problem with using period literature such as Roubo’s text is that they did not know how to identify wood except by outward appearance and as a result mis-identified may of the woods that were listed. It was very likely that the cabinetmakers did not really know what wood they were working with many times. The result of all of this is that the period texts are unreliable.
– purplewood or amaranth - in addition to the drawer runner. In the case of F302, purplewood was used as the runners of the small drawers inside the Abattant section, while oak was used in the upper drawer. While the runners were of solid oak, there was a piece of purplewood inserted close to the front of the cavity running parallel to the front of the secréttaire à abattant. Even in the case of the small drawers inside the Abattant Section, the base wood behind the purplewood was oak.

There were a number of woods used to finish the Harewood Library Table. The primary wood on the outside was Indian Rosewood (originally red brown in colour), with Tulipwood borders and banding (originally pink and tan). Satinwood (yellow) and Holly (white) were used for the marquetry. The end result of this combination of timbers was very colourful. However it should be borne in mind that much of the colour would come from the dyes that were used on the veneers and not (strictly) of the woods themselves - these dyes will be discussed later (See p. 293). A chart of the different woods used on the Harewood table and Riesener’s F302 can be seen in table 5-11.

On F302 there were also a number of different woods employed to finish the piece. On the inside there was tulipwood, boxwood, ebony and purplewood. Tulipwood formed the drawer faces and the inside of the compartments, surrounded ebony and boxwood stringing and purplewood banding. The result was - like with the Harewood table - a very brightly coloured interior.

The outside was similarly colourful. The inlaid flowers were made of a type of fruitwood (pinkish brown) with a centre of barberry/berberis (yellow). This pink and yellow flower

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169 In F300, also at The Wallace Collection, the strips of rosewood were added to the drawer itself. It can be speculated that the use of rosewood was an experiment to make the drawers run more smoothly and for the surface to last longer as rosewood is a denser and oilier wood than oak. Because Riesener only did this on a few examples, most likely this was an experiment that his workshop tried but because it was either too troublesome or too expensive to continue for the small benefit, they decided not to make it a permanent standard.

170 See Appendix G for more details and the French translation of these phrases.

171 Based on an 8x-magnified analysis of the wood by Y. Chastang and his prior restoration experience. The fruitwood is either Pear, Apple or white-beam and the colour is based on prior experience at another workshop when these flowers were removed and viewed from underneath. Furthermore, inspections on a table at Waddesdon also suggests that these flowers did not have a hint of green in them which in turn is
was surrounded by holly and the same ebony and boxwood stringing seen on the interior. All of this was embedded in a trellis pattern made primarily of satine’ (dark red) or purplewood (dark purple) and sycamore (light yellow) circles - see Figures 5-64 and 5-65).

The ormolu on F302 was set against a background of green stained sycamore and purplewood, edged with boxwood and ebony. On the corners, underneath the ormolu, was more green stained wood; this time a burr walnut.
What follows is a chart summarizing the woods by Chippendale and Riesener.

**Figure 5-64**: Inside top view of F302 showing veneers used. On the left is an overview of the inside of the top section of F302, on the right is a close-up of a drawer front.

**Figure 5-65**: Section of fall front of F302 showing the different woods used in its decoration.

Ebony and Boxwood stringing on drawer face

Tulipwood (background)

Purplewood (banding and edges)

Ebony and Boxwood stringing on drawer face
### Table 5 – 11
### Summary of Woods Most Likely Used by Chippendale and Riesener\(^{172}\)

<table>
<thead>
<tr>
<th>Cabinet Maker / General Use</th>
<th>Common Name</th>
<th>Latin Name</th>
<th>Probable Source of Timber</th>
<th>Specific Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chippendale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural</td>
<td>European Oak</td>
<td><em>Quercus sessiflora</em></td>
<td>North eastern Europe (Germany, Poland or Prussia via the Baltic)</td>
<td>For structural components. Such as the frames for drawer cavities, most components on drawers, etc. Originally light brown in colour.</td>
</tr>
<tr>
<td></td>
<td>White Deal or Norwegian Spruce</td>
<td><em>Picea abies</em></td>
<td>Norway, Baltic area(^{173})</td>
<td>Some structural elements (top of pedestals) Originally it was whitish in colour.</td>
</tr>
<tr>
<td><strong>Veneers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian Rosewood</td>
<td><em>Dalbergia latifolia</em></td>
<td>Southern India</td>
<td>This was the most widely used veneer on this piece as it formed the background material for the marquetry. Originally it had a dark purple colour with some dark strips.</td>
<td></td>
</tr>
<tr>
<td>Satinwood</td>
<td><em>Fagara flavia</em></td>
<td>West India</td>
<td>Some of the detailed marquetry. Originally it was a yellowish colour.</td>
<td></td>
</tr>
<tr>
<td>Tulipwood</td>
<td><em>Dalbergia frutescens</em></td>
<td>South America</td>
<td>Much of the banding that surrounds the marquetry was executed in this timber. Originally pink and tan.</td>
<td></td>
</tr>
<tr>
<td>Holly</td>
<td><em>Ilex aquifolia</em></td>
<td>England</td>
<td>Extensively used in the marquetry. It was dyed a number of different colours to form the decoration. Originally it was white in colour.</td>
<td></td>
</tr>
<tr>
<td><strong>Riesener</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural</td>
<td>Oak or chêne</td>
<td><em>Quercus sessiflora</em></td>
<td>North eastern Europe (Germany, Poland or Prussia)</td>
<td>This was the only wood used in the construction of F302 this included making the drawers, the backs, the doors and the frame. Originally it was light brown in colour.</td>
</tr>
<tr>
<td>Decorative – Veneers</td>
<td>Sycamore</td>
<td><em>Acer pseudoplatanus</em></td>
<td>Southern and Central Europe</td>
<td>Primarily used for marquetry designs. In this case, it was used for the small circles in the centre of the intersection of the bands and for the lilies (See the preceding picture – Figure 58) Originally, yellowish in colour.</td>
</tr>
</tbody>
</table>


\(^{173}\) According to C. Boyd (of his majesty’s customs house London), *The British Tariff and Commercial Guide*, S. Richard & Co, London, 1819, Wainscot logs, fir, and deal also came from East India as did Rosewood,
Table 5 – 11

Summary of Woods Most Likely Used by Chippendale and Riesener\(^ {172} \)

<table>
<thead>
<tr>
<th>Cabinet Maker / General Use</th>
<th>Common Name</th>
<th>Latin Name</th>
<th>Probable Source of Timber</th>
<th>Specific Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloodwood or Satané</td>
<td>Brosimum rubescens</td>
<td>South America</td>
<td>Used to produce the trellis work that covers the outside of F302. Originally reddish in colour.</td>
<td></td>
</tr>
<tr>
<td>Purplewood or Bois de Amanthe</td>
<td>Peltogyne</td>
<td>Central or South America</td>
<td>Used for the edges of drawers, the banding around the doors. Originally dark purple in colour.</td>
<td></td>
</tr>
<tr>
<td>Fruit Wood (Pear, Apple White-beam, etc.)</td>
<td>Family Rosaceae(^ {174} )</td>
<td>Europe?</td>
<td>Used for the petals of the leaves of the water lilies. Most likely they were originally pink in colour (pear?).</td>
<td></td>
</tr>
<tr>
<td>Berberis or Barberry or épine-vinette</td>
<td>Berberis vulgaris</td>
<td>Europe</td>
<td>Used for the centre of the water lilies. These were originally yellow in colour.</td>
<td></td>
</tr>
<tr>
<td>Holly or Bois de houx</td>
<td>Ilex aquifolia</td>
<td>Europe</td>
<td>Used as the background for the flowers in the outside decoration. Originally very white in colour.</td>
<td></td>
</tr>
<tr>
<td>Boxwood or Bois de Buis</td>
<td>Buxus sempervirens</td>
<td>Northern France, Mediterranean basin</td>
<td>Used for stringing around different decorative treatments(^ {175} ) through out the piece. Originally light yellow in colour.</td>
<td></td>
</tr>
<tr>
<td>Ebony or ébène</td>
<td>Diospyros celebica</td>
<td>Southeast Asia and Africa</td>
<td>Always found along side the boxwood stringing. Originally black in colour.</td>
<td></td>
</tr>
<tr>
<td>Tulipwood or Bois de rose</td>
<td>Dalbergia frutescens</td>
<td>South America</td>
<td>Used as the central element in the veneer for the drawer faces and the inside of the compartments. Originally pink and tan.</td>
<td></td>
</tr>
<tr>
<td>Walnut or Bois de noyer (Burr)</td>
<td>Juglans regia</td>
<td>Southern to Central Europe</td>
<td>Dyed green and placed on the bevelled corners under with the ormolu. Originally a very light brown.</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen, both England and France made use of imported timbers. England imported wood from Northern Europe, India, West Indies and South America. France imported timbers from Northern, Central and Southern Europe, Southeast Asia and South America. Note that only England imported timbers from India.\(^ {176} \) In England both pine and oak were

\(^{172}\) Could be a number of different species.

\(^{174}\) These included bordering the tulipwood on the drawer faces and on the insides of the different compartments in both the upper and lower sections, around each of the marquetry panels on the front and sides and around the corner decorations.

\(^{176}\) Perhaps this is the result of the Seven-Year War when France lost access to much of India as a colony.
commonly used for construction, while in France only oak was primarily called upon for this function – even though some forms of softwood\textsuperscript{177} were readily available in France.

In terms of both Chippendale and Riesener’s work, as one might anticipate, only the best woods were selected, with very few knots apparent and none in any important area. More than 200 years later they show very little shrinkage or warping – testament to this quality. Even the deal used by Chippendale had few knots and was still straight after all of this time.

It is interesting to note that many of the woods identified on Riesener’s \textit{secr\'etaire \`a abattant}, F302, were not listed in timbers described in A. Roubo’s \textit{L’Art Du Menuisier \`Eb\`eniste}, which suggests that neither A. Roubo nor most cabinetmakers or timber merchants could identify exotic woods with any certainty. Instead, they based their definitions on very imprecise descriptions - see later in Appendix I (See p. 643.) for a listing of the woods in A. Roubo.

\textbf{Dyes:} The chart that follows shows the colours used in the Chippendale Harewood Table and the Riesener \textit{Secr\'etaire \`a Abattant} F302, suggesting the formulas that could (might) have been used to produce them. Further testing is needed to identify these dyes with any greater certainty, however the formulas given in the next table provides a useful starting point for comparison.\textsuperscript{178}

\textsuperscript{177} These ‘softwoods’ were usually referred to at the time as deal, they were probably either a type of pine, fir or spruce.

\textsuperscript{178} Note testing such as this was conducted a number of years ago by a Jack Metcalf however the findings have not been reported at the time of this documents publication.
### Table 5 – 12

Colours and Dyes Used on the Harewood Library Table and F302

<table>
<thead>
<tr>
<th>Cabinetmaker/Colour</th>
<th>Item Coloured (Wood)</th>
<th>Possible Type of Dye (Key Ingredients)</th>
<th>Where Key Ingredients Originated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chippendale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Red (three different shades) | Holly             | • Brazilwood and water  
• Brazilwood, alum and water  
• Tin Chloride, Brazilwood, water  
• Brazilwood, stale urine, water, pearl ashes  
• Brazilwood, water, saffron, alum or quick lime  
• Dragon’s Blood, Ethyl alcohol  
• Cochineal powder, alum and water  
• Sandalwood powder, ethyl alcohol  
• Madder extract, water         | Brazilwood – South America  
Dragon’s Blood – Mediterranean, Monaco, Socotra (Middle east).  
Sandalwood - India  
Cochineal powder – Mexico, New Spain  
Madder - Holland  
Southern Europe  
India |
| Light Green         | Holly                | • Barberry yellow and Indigo  
• Liquor made from green ebony  
• Ferrous sulphate with either Cutch, fustic, henna or logwood  
• Verdigris  
• Vinegar, Verdigris, sap-green  
• Start with yellow dyes then add vitriolated indigo  
• Alum, Verdigris, sal-armonac  
• Brass or copper filings, Nitric Acid  
• Barberry, turmeric, water  
• Copper nitrate  
• Metal salts in aqueous solution  
• Verdigrise, green vitriol, water | Barberry - Central and Southern Europe,  
Northwest Africa, West Asia.  
Indigo - East and West Indies.  
Cutch - Indonesia  
India  
Fustic – Southern Europe, Northern China, West Indies  
Henna - Africa, southern Asia, and northern Australasia  
Logwood – Mexico and Central America.  
Tumeric - East Indies |
| Dark Green          | Holly                | • Diluting indigo with vitriol then water to produce blue, and then add *berberus vulgaris* until the desired shade is provided.  
179 | Barberry - Central and Southern Europe,  
Northwest Africa, West Asia  
Indigo - East and West Indies. |
| **Riesener**        |                      |                                        |                                  |
| Green               | Background for Ormolu on Top Drawer Section (Sycamore) | • Diluting indigo with vitriol then water to produce blue, and then add *berberus vulgaris* until the desired shade is provided.  
179 | Barberry - Central and Southern Europe,  
Northwest Africa, West Asia  
Indigo - East and West Indies. |
| Green               | Background for Ormolu along corners of cabinet (Burr Walnut) |                                        |                                  |

On the Harewood table, Chippendale (typically) favoured holly, and dyed it various colours in order to produce the desired design. Chippendale made some use of other woods to introduce contrast but primarily introduced colour into the design through the application of dyes. Interestingly enough, the F302 made use of only one dye (green) but Riesener used several different colours of wood to produce the desired effect. Based on this example, one could conclude that Chippendale made much greater use of dyes to produce the colours that he wanted in the Harewood Library Table, while Riesener used a wider range of veneers to produce the colours in F302. However, it is not possible to generalise from this particular comparison. There are several pieces of furniture made by Riesener (for example) where are extensively used - the F300 at the Wallace being a case in point. Interestingly enough, it is generally accepted in the literature that the French were ahead of the English when it came to colour in textiles and dyestuffs, so to see an English cabinetmaker such extensive use of dye is quite intriguing. However, further research would be needed before some judgement could be made about the propensity of these two cabinetmakers to use dyes. It is more likely that this comparison has thrown up an anomaly. At any rate both England and France were to move away from the use of marquetry (and as a result the use of dyes) in the years to follow.

Surface treatments: There is currently no information available regarding the surface finish of either of the two pieces at issue in this case history. We know that both appear (currently) to have shellac based finishes which strongly suggests that both pieces have

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180 The holly has virtually no visible grain, it is white in colour and it is reasonably stable.
181 Based on observations on the furniture.
182 This is despite the fact that dyes were well known in France, in fact, it had been an subject of very intense study supported by the government for a number of years It was known that under Louis XIV the study of dyes was very active, primarily in the area of producing dyes for the textile industry, however much of this learning was thought to have influenced the dying of other materials such as wood. The primary focus was to standardize colours and to create colours that would last longer. (See S. Lowengard, Colour Quality and Production: Testing Colour in Eighteenth-Century France, Journal of Design History, Vol. 14, No. 2, 2001, pp. 91-103 and S. Lowengard, The Creation of Color in 18th Century, Gutenberg-e>, Columbia University Press. 2006 (Found On -line at http://www.gutenberg-e.org/lowengard/, Accessed 06/08))
183 As far back as Colbert in the 17th Century, the French government was very interested in research into dyes, in order to produce the best colours and to enable them to last longer (See See S. Lowengard, Colour Quality and Production: Testing Colour in Eighteenth-Century France, Journal of Design History, Vol. 14, No. 2, 2001, pp. 91-103.)
been ‘restored’ or refinished. However there are clues, which would suggest some of the possible options that would have been used by these two workshops to create the original finish.

Gilbert believes Chippendale would have used a varnish to protect and enhance the surfaces of his furniture, a finish which Gilbert defines as:

“A clear glossy coating of shellac applied to the surface of marquetry to enhance the colours and protect the wood”

He then sets out to specifically describe what he calls ‘white varnish’ which he describes as:

“Clear hard spirit varnish used for coating delicate surfaces such as japanned chair frames, gilding and marquetry; concocted of gum sandarac, spirits of wine, white resin and Venice turpentine”.

This is fairly consistent with the other sources of recipes for finishes that were used by the English during this time. However, a review of the literature on this identified a number of resin based recipes that used either alcohol or turpentine as their solvent. The most commonly cited resins were Sandarac (as suggested by C. Gilbert) and Copal. Other frequently cited resins include; amber, shellac, mastic, resin of turpentine and dammar - see Appendix I: Listing of Formulas for Dyes, Varnishes and Glues used in the 18th Century for a listing of all the different formulas that were found. Most books of the time suggested that these resin based recipes had the greatest clarity and provided the highest degree of protection and these two bases (sandarac and copal) appear to be the most common.

All sources suggest that the shellac based formulas for protecting and enhancing furniture was not popularized in either England or France until the early 19th Century, although shellac was both known and used in some instances before that time.

C. Gilbert, The Life and Works of Thomas Chippendale, p. 132.
No Author Given, Genuine Receipt for making the famous VERNIS MARTIN; or as it is called by the English, MARTIN’S COPAL VARNISH, No Publisher Given, Paris, 1773.
It would seem logical that the quality of the Harewood table – indeed of most of Chippendale’s work that - that the clearest and hardest varnish would be used, i.e. a copal or sandarac formula.\(^\text{189}\)

While French literature in this area also talked about resin based varnishes, they appeared to go to a different direction to protect their furniture - a wax based finish was preferred. There are numerous descriptions of the wax finish on Riesener’s furniture that were delivered to the Royal households.\(^\text{190}\)

These are reported in A. Pradére for example.\(^\text{191}\) They are also to be found

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\(\text{R. Dossie, }\textit{The Handmaid to the Arts, J. Nourse, London, 1758.}\)
\(\text{G. Siddons, The Cabinet-Maker’s rules and instructions in the Art of Varnishing, dyeing, staining, japanning, polishing, lacquering and beautifying Wood, Ivory, Tortoiseshell & Metal (5th Edition), Sherwood, Gilbert, and Piper, London (?), 1830.}\)
\(\text{T. Sheraton, }\textit{The Cabinet Dictionary, W. Smith, King Street, Seven Dials, London, UK, 1803.}\)
\(\text{Tingry, P., }\textit{A Painters and Varnisher’s Guide, G. Kearsley, London, 1804.}\)
\(\text{Copal and Sandarac were clearest and hardest of the resin finishes, more recent research has demonstrated that both are clear to start (Sandarac was the clearest) but that while all ingredients colour with age, Copal becomes relatively less clear as it ages, relative to most other resin finishes. It should be pointed out that testing such as this is very difficult as there are a number of different sources for Copal, Sandarac and other resins and this could affect the quality of the final product. Even authors of that time mentioned this and instructed the readers on how to select the best ingredients. See R. Heesters, H. Keulen and W. Roelofs, Natural resins, Artificially aged in Steps, Contributions to Conservation, (J. Mosk and N. Tennent, eds), James and James, London, 2002, pp. 55 – 63.}\)
\(\text{Various Authors, }\textit{Journal du Garde-Meuble, 1761-1784, These are detailed listings of all furniture that was either delivered, ordered or repaired in service for France’s Royal Households. Copies are located in The Wallace Collection Library and are available in France’s archives.}\)
\(\text{A. Pradere, (Translated by P. Wood), }\textit{French Furniture Makers, The Art of the Ebeniste from Louis XIV to the Revolution}, pp. 374, 379.}\)
in *L’art du peinture, doreur, vernisseur*. A. Roubo also discusses finishes but wax was the one that he describes at length. While modern versions of wax contain mixtures of different waxes and turpentine (to soften it), A. Roubo recommends pure beeswax (bleached, filtered and melted) applied with a stiff brush made of bound reeds.

**Glues:**

In England, historic texts discussing furniture refer to what was called a ‘strong’ glue, while the leading three French texts all refer to the use of ‘English glue’. In both cases, these relate to a hide or skin glue rendered from the skin of cattle or sheep and (apparently) older cattle produce the best glue:

> The makers of Strong-glue usually employ more common substances, such as leather clippings of oxen, calves, sheep, horses, etc. … & the older and thinner these animals are, the stronger the glue is.

The process for making a basic ‘strong’ or ‘English’ glue was to first soak skins in water - sometimes lime water. The skins are repeatedly rinsed until the water is clear which serves to remove dirt and impurities and to dissolve the fleshier and bloodier parts. Sometimes a solution of alum and tallow was added to the water. The next step is to put clippings of rinsed hide in water that is to be boiled in a copper pot for 12 to 15 hours, skimming off the scum that forms on the surface. One needs to keep the solution warm and remove the impurities which accumulate on the bottom of the pot. Once sufficiently pure, the solution is poured into wooded moulds through hair sieves to filter off any remaining impurities and then left to dry. Once dried, the glue can be reheated and applied when needed.

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192 According to Godla (See J. Godla, The Use of Wax Finishes on Pre-Industrial American Furniture, 1991 WAG Postscripts, Albuquerque, NM, USA, (No Page number was given, article was located on the web page http://cool.conservation-us.org/coolaic/sf/wag/1991/WAG_91_godla.pdf)) The 1755 edition of J. Watins, *L’art du peinture, doreur, vernisseur* the varnishing section starts with a statement that the preferred method of coating a piece of furniture, by the ‘mid-century Parisian furniture shops’ was to use wax and not varnish. This was not included in the 1776 edition of this same text.


194 See for example: D. Monceau,(translated by A. Higgenbotham in 2005) *L’art de faire différentes sortes de colles (The Art of Making Various Kinds of Glues)*, The Royal Academy of Sciences, Paris, 1771, p. 2. However, this is also true in Roubo’s *L’Art Du Menuisier* (See A. Roubo *L’Art Du Menuisier*).

It is interesting to note that English texts often give formulas for adulterating the glues - the French texts (at least those reviewed by this author) made no mention of these variations. These adulterations included things to make the glue moisture resistant or make the glue work better with metals or glass - see Appendix B for a listing of these formulas. However, French texts do mention various glue types such as;

- Calves Feet-Glue (Flanders Glue), which was more transparent than ‘strong’ glue - but weaker. Good for paper.
- Glove-glue or Parchment Glue - made from white glove skin. Again weaker but less inexpensive. Good for Tempera paints, gilding, and clothing.
- Fish glue - made from the fins, nervous and mucilaginous parts of fish. However the best is made from the bladder of the sturgeon.
- Flour-glue - usually made from whole-wheat flour generally but also from rye, black wheat or buckwheat flour. Good for paper and cloth.

**Metals:** There were a number of metals that were used on the two pieces of furniture at issue in this case study. As described above, both the Chippendale and the Riesener pieces were decorated with a significant amount of ormolu. To hold these in place, Riesener attached steel screws and bolts to the backs of the ormolu. Chippendale used brass pins and screws, inserted through the front of the gilded metal. Both makers used locks that were made of steel and brass, which used steel for the screws to hold them in place. Chippendale used screws to hold the top in place and fix locks in place and he used small pins to hold the lower drawer runners in place. On the Riesener piece, hinges were made of brass with brass screws. Chippendale, as noted earlier, used a steel support that was attached with steel screws. To hold ormolu in place on the Harewood table, Chippendale used small brass nails and screws while on Riesener’s F302, most of the ormolu was attached with a steel rod that was attached to the back of the ormolu and inserted through

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196 This was to produce glue for different materials (glass, marble, leather) or situations (when the environment is to get wet, or when a flexible glue is needed. These are detailed in Appendix B or see T. Sheraton, *The Cabinet Dictionary* or E. Chambers, *Cyclopaedia or An Universal Dictionary of Arts and Sciences*. 197 There were occasions where steel appeared to have been used, but it is unclear if these were original or replacements that were added at a later time.
the wood then a nut was attached from the inside. There was an escutcheon located on the door of F302, which is missing at this time. It is assumed that this too was of gold ormolu. The keyhole on the face of the abattant is discreetly incorporated into the design of the plaque which surrounds it, hidden in the ribbon.

It should be noted that while the general perception and the usual description of ormolu mounts from this period is that it is mercury-gilded bronze (Copper plus tin). However testing has been accomplished on two of the secrétaire à abattants by Riesener that were discussed in this thesis as well as several other French pieces that were made during this period. The table (Table 5-13), which follows later in this chapter (see p. 307) details these findings.

**Marble:** The top of F302 is a white veined marble slab that has been cut in the shape of the top of the secrétaire with canted corners and a flat front and sides and is surmounted by an ormolu gallery. The edges of the cut of the sides are flat with no profile. Ormolu top railing that was discussed earlier (See p. 255). While no petrographic analysis was conducted on this marble, in most texts this is identified as a Carrara marble from Italy.\(^{198}\) Chippendale’s library tables made no use of marble.

**Leather:** The leather used on the fall front of F302 is known to have been replaced since it was originally made. Currently the leather in place is cow leather that has been dyed red. Most secrétaire à abattant provided to the Royal family by Riesener had black Moroccan skivers thought to have been made from goatskins. Sometimes a gold border was embossed around the edge, sometimes silver. The Harewood table has a leather skiver to cover its expansive top and while the leather has been replaced, the embossed border is thought to match the original, although there is no evidence to confirm that this is correct.

\(^{198}\) This marble is reported to come from the province of Massa-Carrara near Tuscany.
G. Special Topics

In addition to the basic structural approaches described above, there are several smaller issues of note. This section begins the process of identifying these details and analysing them.

Attaching Ormolu to the Piece of Furniture: It has been claimed that the advantage that Riesener had in working directly for the crown, lay in the access to the range of artisan skills it provided. The fact that Riesener was familiar with both the production of ormolu and the problems associated with attaching it to furniture, led (for example) to him seeking a solution to the problem of attaching them in a less obvious way. Other cabinetmakers usually secured ormolu by simply placing a screw through the face of the ormolu (while trying to hide its presence as much as possible) into the wood. Riesener developed a technique which kept the screw hidden from view, perhaps based on a technique developed originally by Andre Charles Boulle. Riesener’s technique was to cast or braise post with a threaded hole (to take a screw) to the back of the piece of ormolu. By inserting the post through the wood and using a screw to secure the ormolu, fixing was rendered invisible from the front. In the few cases where these bolts would have interfered with the appearance of the inside of the piece of furniture, Riesener covered the fixture with a piece of veneer to match the surround. A series of photographs that demonstrate how Riesener performed this trick can be seen below. ¹⁹⁹

It is interesting to note that there are examples when Riesener uses conventional methods of fixture — the thuya veneered secrétaire à abattant at The Wallace Collection for example.

On the F302, the gallery at the top of the piece also uses screws to hold it in place – and while it is possible these have been added later, any firm conclusion concerning this debate, could only be resolved by removing the gallery to ascertain whether this ormolu was ever attached another way.  

The fact that on some occasions screws were inserted into the front at a later date points to a common problem created by Riesener’s technique. On many of Riesener’s pieces there are visible signs that pieces of veneer on the inside have been replaced, where the veneer has been cut out in order to access a bolt holding the ormolu which has had to be removed in order to either clean or repair the ormolu or simply remove the ormolu to repair or clean the surface of the wood. Removing ormolu cannot be accomplished without risking damage.

One might think that Chippendale might have developed similar techniques to hide the screw from view but this was not the case. In fact Chippendale used screws and pins

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200 A review of the files at The Wallace Collection did not indicate that anyone had ever looked at this issue or they had simply not documented any observations concerning this.
inserted through holes drilled through the ormolu on the Harewood desk. However, great care was taken to trying to hide the pins and screws by setting them among design elements that would help conceal them.

**Quality of the Ormolu**

There follows below a series of photographs which show a close up of a couple of sections of ormolu found the two case study items. Several conclusions are immediately evident. The Riesener ormolu is of a better quality of carving, moulding and chasing than the Chippendale ormolu. The colour of the metals also appears different too – though further testing would be needed to confirm the specific formulas of the metals used. The conclusion that the Riesener piece appears to have the better quality of ormolu is not surprising for two reasons:

- Riesener’s expertise was reflected in his greater use of ormolu; its use was quite rare for Chippendale.
- In general, French furniture was also more likely to have ormolu than English furniture; suggesting that the industry for its production was a great deal more developed in France than England.
Figure 5-70: These picture show examples of the various locations where Chippendale’s workshop used screws and pins to hold the ormolu in place. While this is probably not the most favourable approach to attaching ormolu from an aesthetic point of view, Chippendale’s staff went to great effort to disguise the locations of the screws and pins as evidenced in these pictures.
Figure 5-71: These details of the ormolu on the Chippendale Harewood Library Table (top) and Riesener’s F302 (bottom) demonstrates the higher quality of the chasing on the Riesener piece. Notice the brighter highlights and the smoother finish on the highlighted sections. One example is the forehead on the ram’s head, which shows obvious bumps and imperfections. A close inspection of the small beads also shows that the Riesener ormolu is better shaped, more distinct and more consistent in their shine. Again, this suggests an improved finishing. Greater detail is also evident on other sections of ormolu.

While this next suggestion could be due in part to photographic imperfections, or differences in the relative conditions of the metals, the colour of the Harewood Library Table’s ormolu is slightly greener than that of the Riesener pieces indicating a possible difference in the metals used to base or to coat the ormolu on these two pieces. Further testing would be needed to confirm what the differences are. (Note all but one picture were taken by the author, the lower left picture was taken from P. Hughes, The Wallace Collection Catalogue of Furniture, Vol II. p. 999).
It should be noted that while the general perception and the usual description of ormolu mounts from this period is that it is mercury-gilded bronze (Copper plus tin). However, testing has been accomplished on two of the *secrète à abattants* by Riesener that were discussed in this thesis as well as several other French pieces that were made during this period. The findings indicate that the better description of the base metal would be brass (Copper plus zinc). However, even in this description the ratio of copper to zinc is quite variable with the percentage of zinc ranging from 25% (for the Riesener *secrète à abattant* - F303) to the low of 14% for a commode made approximately 30 years prior. The measurements for the Riesener pieces varied quite significantly with the percentage of copper ranging from 68% to 78% and of zinc it was 16%-25% (the other materials measured were quite consistent). While there was one English piece made during this time that was included in the testing it had slightly smaller proportion of copper (78%) and zinc (19%) and virtually no tin (<1%).

The following table (Table 5-13) details the findings. In this table there are four pieces that were by Riesener; two *secrète à abattants* and two commodes. It should be pointed out that three (the two commodes and F303) make use of the later detailed floral designed ormolu. That does not appear to be a factor in different metal formulations.
Table 5-13

XRF ANALYSIS OF ORMOLU ON WALLACE COLLECTION FURNITURE

<table>
<thead>
<tr>
<th>Description (Ref No./maker)</th>
<th>Date Made</th>
<th>Copper (Cu)</th>
<th>Zinc (Zn)</th>
<th>Tin (Sn)</th>
<th>Lead (Pb)</th>
<th>Iron (Fe)</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secrétare à abattant (F300 Riesener)</td>
<td>1780</td>
<td>69%</td>
<td>21%</td>
<td>2%</td>
<td>0%</td>
<td>2%</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>74</td>
<td>21</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Secrétare à abattant (F303 - Riesener)</td>
<td>1783</td>
<td>71</td>
<td>24</td>
<td>1</td>
<td>&lt;1</td>
<td>1</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>68</td>
<td>25</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>Chest of Drawers (F86 - Gaudreaus)</td>
<td>1739</td>
<td>74</td>
<td>19</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>77</td>
<td>20</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>&lt;1</td>
<td>100</td>
</tr>
<tr>
<td>Commode (F70 - Marchand)</td>
<td>1755</td>
<td>76</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>81</td>
<td>14</td>
<td>&lt;1</td>
<td>2</td>
<td>&lt;1</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Chest of Drawers (F246 - Leleu)</td>
<td>1772</td>
<td>70</td>
<td>24</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>77</td>
<td>19</td>
<td>&lt;1</td>
<td>3</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>100</td>
</tr>
<tr>
<td>Chest of Drawers (F247 - Riesener)</td>
<td>1780</td>
<td>71</td>
<td>16</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>74</td>
<td>24</td>
<td>&lt;1</td>
<td>1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>100</td>
</tr>
<tr>
<td>Corner Cabinet (F275 Riesener)</td>
<td>1780</td>
<td>76</td>
<td>17</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>78</td>
<td>18</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>&lt;1</td>
<td>100</td>
</tr>
</tbody>
</table>

The other elements that were uncovered using the XRF methodology include Nickel (Ni), and Antimony (Sb). In all cases, these registered at less that 1%.

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201 While other materials were detected the key ingredients of interest in determining if the base metal of the ormolu was brass or bronze are the three detailed here. The tests were conducted twice and both sets of findings are shown here. Note also that all of these pieces of furniture were French.
202 All pieces tested were from The Wallace Collection; the numbers presented are those catalogue numbers that can be located in any version of their catalogue whether it is the P. Hughes or the F. Watson versions.
203 The use of the term ‘chest of drawers’ is the term used in the report. The furniture maker of this piece is Antoine Gaudreaus (1682-1746).
204 The cabinetmaker’s name is Nicolas-Jean Marchand (1697 - 1755)
205 The cabinetmaker’s name is Jean-Francois Leleu (1729-1807)
An interesting study would be to track the changes in Riesener’s work across his career to see if his ormolu used consistent formulas across this time. It is suspected that that there would have been a difference in the formulas.

It should be pointed out that similar analysis has not been conducted for the Chippendale piece of furniture. This was due to the lack of funding for this additional analysis. The analysis for The Wallace Collection had been conducted by The Wallace staff and did not require additional funding.

**The Internal Structure for Inserting Drawers:** Again, there were some very interesting comparisons between Chippendale and Riesener in the approach to making the slots or cavities for holding drawers. Both approaches were effective and reflective of the high quality that was practiced in each of the workshops but they were different.

For example, there was very rarely a case with Chippendale’s work that did not stop the drawers with two small (approximately 3-4 mm thick) hexagonal piece of oak. In one exception on the Harewood desk, Chippendale used an overhanging lip and hexagonal pieces of oak to stop the drawer from going in too far - see Figure 5-72. The use of these hexagonal pieces allowed for slight inaccuracies or error.

Riesener on the other hand used the length of the drawer to define how far the drawer went into its slot. The result is that the Riesener pieces were entirely dependent on the skill of his cabinetmakers to ensure a good fit. In only one case – the F300 at the Wallace - was a
mistake noticed on a Riesener secrétaire à abattant, where a small strip of wood had been attached to the end of the drawer to correct an error in its measurement.206

Riesener also used thin strips (approximately 3-4 mm thick) strips of rosewood (palissandre) as drawer guides and it was reasoned above that this was not a mistake. There are several possible reasons for this selection. First it frequently matched the edges of the drawers (even though most people never saw this piece) the second reason is that it is a very hard and a very durable wood which would make it good for this purpose. Thirdly, it was a very oily wood which would aid in the working of the drawer. Chippendale used oak as the runner for the drawers of all the library tables examined for this thesis.

**Internal Construction of the Secrétaire:** Chippendale and Riesener approached the design of the internal sections of the Secrétaire differently, though Chippendale made only two secrétaire à abattant as far as we know – one finished in marquetry and the other Japanned.207 Most of the pictures that follow are of Chippendale’s Japanned secrétaire and

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206 Because the colouration of the added strip of wood it appears to be the same age as the wood used in the body of the drawer it appears that the piece was added by men in Riesener’s workshop.

207 The only notable difference between the two are the materials used for the outside covering, while one used a marquetry veneered technique, which was typical of many of Chippendales later pieces, the other used special Japanned panels that had been purchased by Edwin Lascelles and given to Chippendale to produce this and a couple of other pieces of furniture. Because, structurally they appear to be the same, and they were built around the same time as each other it is assumed that they actually are the same structurally.