

THE CARE AND CONSERVATION OF LONG CASE CLOCKS

By Michael Barrington

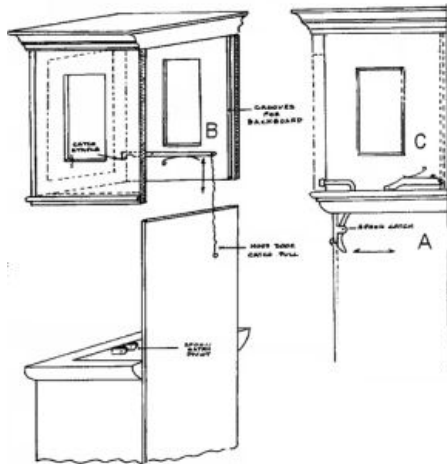
With the exception of the very finest and rarest, the longcase clock is, in comparison with other types of furniture, grossly undervalued. This seems especially relevant when one considers how advanced the design and making of clock movements was in an era which began some 200 and more years before the invention of the steam engine, electricity, steelmaking and, particularly, reliable means of accurate measurement and standardization in such areas as screw threads. Add to this phenomenon the fact that clocks made 200 years ago are still going and keeping time at standards acceptable for most domestic purposes and the undervaluation of old clocks becomes more obvious. It seems reasonable therefore to say that at least we should treat the clock with respect, maintaining its working through care and maintaining its integrity of design.

The Victorians were notable for their desecration of both clock movements and cases, sometimes in pursuit of "improved" design and performance, sometimes to meet changes in fashion but also through sheer ignorance and poor craftsmanship. Unfortunately these problems persist and a great deal of damage is still done to both cases and movements. It was in the latter part of the 19th century when "antique collecting" became a serious hobby and business, that the trade of "antique furniture restorer" was born. The trade has burgeoned ever since, particularly in times of inflated valuations of antiques, with an accompanying proliferation of unsympathetic and downright bad restoration work and little or no regard for conservation which is a comparatively modern post World War 2 development. Clockcases, and particularly country clockcases, seem to have borne the brunt of bad workmanship and it is principally in such clocks that we find the worst evidence. Finer quality clocks too have not been exempt from poor treatment but their usually obvious superior quality has perhaps afforded them some degree of protection.

Many clock repairers/restorers do not profess to cater for clockcase conservation and restoration, much in the same way as not every clockmaker made their own cases. Casework has always tended to be a separate trade and is nowadays definitely the preserve of the furniture conservator/restorer. It is imperative that the case restorer has a thorough working knowledge of how clocks work for it is he who is responsible for ensuring their correct environment for correct and long lived working.

Major Alterations to Clock Cases

Before embarking on examples of typical damage found in longcase locks, it is worth looking briefly at some history. The revolutionary pendulum clock pioneered in Britain by Ashmoleus Fromanteel in about 1650, with technology imported from Holland, was a breakthrough in time keeping which certainly in the lantern clocks of earlier years was more an approximation than a science! Only very wealthy people could afford to commission clocks and this was often clearly done as a statement of status. Consequently clocks were highly valued and the owners, or chosen henchmen, were the only ones allowed to wind or otherwise attend the clock. To make this a reality, great lengths were pursued to ensure security of the clock. Hoods were generally of the rising type, sliding vertically on the backboard engaging in grooves in the hood carcass sides (Fig 1).



A spoon catch (A) enabled the hood to be secured by shutting the trunk door, which was locked and presumably openable only by the keyholder.

The hinged opening hood door came later, probably as a result of generally lower house ceiling heights demanded by economics and perhaps fashion. In houses with lowered ceilings, hoods could not be lifted, since they required at least 2 feet of free air above the clock. The answer for these clocks was therefore to cut off the front of the hood, making an instant door which might be secured either by a separate door lock (a cut-cupboard or staple lock), no lock at all or a neat spring-loaded catch (Fig 1B) operated by a cord hanging down inside the trunk, thus maintaining the single point access of the rising hood clock. Often the saw marks of the hood cutting were left untrimmed and the grooves in the hood sides left unfilled and, hopefully the mechanism for holding the hood both up and open (Fig 1C) and lastly the spoon catch have not been removed. Few fully complete examples remain but certainly some evidence of the rising hood usually remains intact. Those interested in the history of such clocks can usually find the evidence, or parts of it, and may detect such desecrations as filling in or otherwise disguising the sliding grooves and covering up the saw marks of hood-cutting with veneer, since planing would probably render the door frame too thin.

The next and probably the most horrible alteration to longcases of all vintages and origins is that of shortening them to fit into a particular room. However, because of the status of the clock as a piece of family furniture which may have passed through several generations, it is easy to see why some people will go to such lengths to get their heirloom clock into a room with low ceilings. The advice that they might either sell the clock and buy a shorter one or even move house will generally not be appreciated! A tall city-made clock will stand between about 7ft and 8ft 6ins which can be some 12 to 18 inches more than cottage or modern ceiling heights of little over 6 to 7 feet respectively. This is a lot to lose and will certainly not be achieved by just removing the brass finials, balls etc from the hood top or even lopping off the bottom of the plinth. It is not uncommon to see holes cut in ceilings and floors to accommodate a particularly precious clock but it is an option which will not appeal to everyone, although it does preserve the clock's integrity and incidentally its monetary value.

Unfortunately, sinking a clock into the floor, which may be damp, can have serious effects on the welfare of the plinth. Lowering the plinth height will almost certainly destroy the proportions of the clock and make it look stunted, and if it is a marquetry case, much of the picture on the plinth will be lost. However, shortened plinths are relatively easy to restore to their proper height but will be expensive if new marquetry has to be designed and cut. It is essential that the restorer knows enough about clockcase design and does not embark on what may be a serious alteration quite unrelated to the original design of the clock and there are many such examples.



Another shortening option, in which the trunk length is altered, is worse still and usually signals the end of the clock case as a collectable item.



The result is that the proportions of the whole case are ruined, necessitating a

complete re-build of the trunk which, however well executed, destroys the integrity of the clock. Examples of both trunk shortening and the ravages of damp and woodworm are shown in Figs 2 and 3. which depict the lower backboard and one plinth side respectively. This marquetry fronted clock had suffered numerous abuses through both alterations in height and attempts to repair wet rot and furniture beetle damage.

To continue, evidently the amputation of the trunk was not enough and the hood (4) was attacked. It is likely that the original hood was little if any higher than the ballustrated hat that has been attached, probably in the 19th Century, so one wonders whether this was done either out of ignorance of the most likely design of a normal moulded (cross grain) and perhaps missing original pediment or in an attempt to "improve" the look of the clock. Anyway the result is dreadful and would require a complete rebuild to restore the hood to anything like its original form and the ebonised pillars would need to be replaced with spiral twists (note the quarter section twists at the back which are original). Again this would be unlikely to a cost-effective exercise.



The last point about this poor clock is the shape and position of the lenticle. The lenticle (Fig 5) is filled with either plain or pot glass and the pendulum bob should be directly behind it, flashing through the glass as it swings. Since the pendulum is of set length, so must the lenticle be in a set position.

This one is in line with the pendulum bob but it is decidedly off-centre in the layout of the door's marquetry which suggests that either the door started its life without a lenticle or that the cutting of the trunk was done with little regard for the final position of the pendulum bob in relation to the trunk door.

Lastly, the quality of the lenticle frame is absurdly amateur, so perhaps the whole sequence of operations was done by an enthusiastic amateur or, possibly, the door came from another clock, because there is no evidence of either hinges or lock having been moved, but there is very little space between the top and bottom edges of the marquetry and the door moulding, so perhaps the door has been cut both ends.

Typical Damage to Clock Cases and Some Ideas on Conservation and Restoration

Backboards

The backboard is the clock case's spine and everything in the case is attached to it in some way. It is therefore important for the stability and longevity of the clock that the backboard does its job properly. Where the backboard bottom is rotten or worm-eaten, it needs to be treated by either consolidating the unsound timber or cutting it out and replacing it. Consolidation of degraded wood is generally practical either with the use of injected resin based or other consolidant material or by steeping it in hot glue which means submerging it in thin glue size and letting it simmer until all air has been driven out of the flight holes. This latter method of glue consolidation is impractical because of the size of the backboard. However, backboards are thin, at the most say half an inch in thickness, consequently often much material is missing, either because rotten wood has fallen away or wood has disappeared as "frass" which is the wood dust or regurgitations of the woodworm larva. In such very common cases the best way forward generally is to replace the degraded areas of wood. This can be done crudely with a straight butt joint and a wood strap, usually on the inside, which is in danger of interfering with the drop of the weights.



A better method and certainly neater, is to half-lap the boards new with old, using old wood.

However, a better method in my view, is to use what is known as a coppersmith's or 'shark's tooth' joint (Fig 7). This has the advantage of a larger gluing area, albeit on slanting end-grain (which is better than pure end-grain) and because it is less noticeable than the horizontal lap joint. It is in fact very strong if well executed. There is no point in going overboard in concealing the joint which becomes very much a part of the clock's history and is a perfectly legitimate and sympathetic piece of restoration. The picture at Fig 8. illustrates the 'sharks Teeth' method of repair of backboards together with appropriate new side pieces behind the plinth.



Plinths and Feet

While many clocks stand on plinths of some kind, an equal number stand on feet and the 17th century cases are often on four bun feet. Clock design is as regional as that of country chairs and dressers. It behoves both owner and restorer to research what is correct for a particular clock. This work is both interesting and rewarding. Sadly far too much of "this will look nice" goes on in clock case restoration. This is one of many examples which demand that a restorer must know the history of the pieces he/she works on.

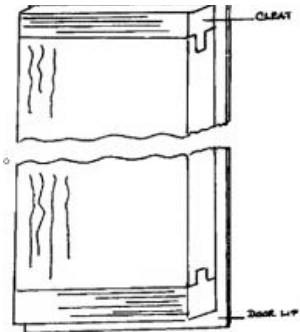
Doors

The shape of the trunk door varies hugely in clock design. The earlier clocks were somewhat austere and had oblong doors with square corners and often applied decoration either of veneer or marquetry or, of course, lacquer. Invariably the walnut cases had cross grained mouldings or banding to the door edges or surrounds. The cross-grain moulding warps delightfully with age and is, as on all walnut furniture of the 17th and early 18th Centuries, generally a tell-tale mark of authenticity. I say "generally" because walnut is one of the easiest woods to "fake" and much excellent "reproduction work" was done by skilled cabinetmakers in the 19th century and one can be easily fooled! In passing, this is a factor which deters many Antique Dealers from stocking walnut pieces.

What does not fool anyone is the replacement of cross grain with long grain and you can easily find examples of this. Few clock cases had handles on the doors, this was to come in the 20th Century. Most doors are opened by their keys and there will be either a flush brass escutcheon lining the keyhole or a brass plate escutcheon nailed (not screwed) on the surface. Doors usually have applied edge-mouldings or lip mouldings and have to have special cranked hinges to allow the moulding to 'clear' the carcass when the door is opened. Such hinges may be of iron or brass and the former is usual in 17th and early 18th Century and country cases. The iron hinges of the 17th century were nailed and later brass hinges were more usually secured with iron screws. It should be said here that this is about the only place in which screws would have been used in a clock case. Nails were of the forged flathead clout variety for securing hinges etc. Elsewhere iron 'cut' nails and sprigs would have been used, especially in securing the backboard.

Single board doors, which are common to country clocks, may be cleated top and bottom as in Fig 4. to counteract warping but it is





as common to see uncleaned doors which are often warped. The heart side of the one-piece door is generally to the outside so that the door warps towards the inside of the clock trunk (away from the heart). This fault is better than having the door sides warp outwards, known as "Smiling"). Veneered and marquetry doors and especially lacquered doors, were generally cleated and quite often this shows through the applied surface where the substrates have moved. Warping is a difficult fault to restore and indeed, because it has happened through the natural movement of the wood, there is a strong argument for doing nothing. Racking, that is warping across the diagonal, is quite common and largely incurable. The repositioning of one hinge may compensate but is unattractive. Whilst on this subject, the principle of minimum intervention is a basic rule of conservation which all good conservator-restorers should observe quite religiously. Before we leave "Doors", the 20th century flat-head key looks inappropriate on all antique furniture and particularly in clock doors where it is very obvious. A flat-head key can easily be filed into a nice replica old fashioned key bow and I believe it worth doing; it certainly does not degrade the clockcase or its integrity. Alternatively a new key can be made or a traditional bow silver soldered to the existing shaft.

Hoods

Hood door frames are either half-lap jointed or, in the best work, are tenoned. Often veneer or marquetry covers the joints. The hingeing of the hood door is either on iron pins top and bottom, often located in the ends of a door pillar or, because a door with pillars attached must swing well clear of the hood carcass, special swan neck hinge plates are used to enable the door to move well out of the way of the hood sides and avoid a collision. The twists of the pillars, if fitted, may be handed (right and left) on some hoods and it is a nice feature which is surprisingly obvious to the viewer. More commonly the twists are both of one hand, usually right-handed. The pillars, of whatever design are usually repeated at the back of the hood with quarter-sections of the same design and hand as those at the front.



The glass in the door must not be modern float glass and certainly not the non-reflective picture glass! Old handmade cylinder glass is becoming more difficult to find and, to my mind, the replica material of today is not that convincing and neither is it thin enough. The restorer must go out and buy some old 19th or early 20th Century pictures in the local market to build up a stock of old glass. Modern float glass shouts at you and, I believe ruins the look of an old clock. The glass is almost always puttied into the rebates of the door-frame and given a coat of varnish or shellac. Lastly, the construction of hood sides is interesting but not obvious to everyone. In hoods with rectangular side windows, the sides are generally made of three pieces which quite neatly provides the window. In oak and mahogany clocks the grain of the three pieces of wood is usually vertical, whilst in walnut examples the centre section is turned on its side with the grain running horizontally, sandwiched between two vertical neighbours. This latter construction facilitates the making of the small integral mouldings round the window which will all be cut along the grain, which in turn defies the general practice in walnut furniture of producing mouldings across the grain! The best examples however, will probably have small cross-grain mouldings applied to each of the four sides of the windows.

Seat Board

This is the horizontal board which carries the movement and to which the movement is usually secured by two hooks with screwed shanks which either hook over the two bottom movement pillars or long screws. It is always very obvious when a seat board has been renewed - a practice which should be avoided where possible. The seat board usually rests on the tops of the two side members of the trunk which extend into the hood space above the collar. These side members are often of thin section and become damaged to an extent when the seat board and hence the movement are neither safe nor stable. It is important for the running of the clock that the seatboard should be firm and carry the weight of the movement with the weights and pendulum as well as supporting the extra stress caused during winding, however carefully done. The seat-board needs to be level and parallel with the ground.

The most sympathetic way to restore badly damaged side members is to make replacement extensions which are jointed in such a way that there is no interference with the clock lines and the fitting of the hood which slides horizontally above the collar. The seat-board normally rests on the side pieces and is held there by the weight of the whole movement or it may be screwed. Its positioning is entirely dependent on the correct, level and central presentation of the clock face/dial through the hood front. The side members of the case in Fig 9. have been extended upwards using half-lapped jointing from just above the inside of the collar. It is most important to try to retain the original seat-board and the only usual reason for not being able to is if the board is severely twisted or 'racked' and cannot be made to sit flat.



Finishes and Decoration

Cracked marquetry on an unstable substrate is common. Part of the joy of old marquetry is the roughness of surface which develops naturally as veneers move and begin to curl very slightly at the edges. Loose and missing marquetry must be restored, but beware of those who would try to resurface it and damage or even entirely remove that special "unflat patination" so typical of old marquetry work.

Damaged lacquerwork or japanning is not as easily ignored because it is often very unattractive, showing the white gesso coat underneath. Restoration and conservation of these finishes is achievable without seriously altering the object's integrity and it is arguable that a properly restored lacquer or japanned finish, albeit involving major work, achieves more in the preservation of integrity than leaving it merely stabilized but seriously degraded in its appearance. This is an area in which the conservation and restoration arguments are fiercest! Restoration of lacquerwork is a very specialist area and involves serious artistic skill. Urushi, the basic material of lacquer is 'unfriendly' to work with and requires much skill and experience. It should not be confused with western japanned work. Good lacquerwork is valuable and should be treated really carefully by a person who specializes in the skill - not many do! Finally, not all furniture conservator-restorers will necessarily have detailed knowledge of clock case design and history. It is as well to satisfy yourself that the person you choose to look after your clock case has the necessary experience. It is usual, anyway in BAFRA, for members with particular experience and skills, to advertise the fact.