

Lefever Arms Collectors Association



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Dr Bob Decker

The Petroleum-Based Oil Threat to the Preservation of Classic Shotguns

Steve Wesbrook

I would like to thank the editor for including in the March-April issue of the LACA newsletter pictures and a description of the Nichols & Lefever 10-gauge hammergun, serial number 5462. It is a superb example of the craftsmanship of American gunsmiths of the 1870s. Based on guns I have reconditioned or fully restored, it's quality is on the same level as similar grade guns manufactured by W. & C. Scott and W.W. Greener in Britain. The fact that these firms prospered and Nichols & Lefever did not is largely the result of huge disparities of wealth in America at the time. The few people who could afford such quality, the 1% of America's Gilded Age, bought British shotguns as a mark of their wealth and status.

I understand that based on the serial number this is the second oldest Nichols & Lefever known to have survived. As someone who spends a lot of time working to preserve late 19th century and early 20th century doubleguns, I have thought a lot about why some high quality and obviously once very expensive shotguns have been well preserved and others have not.

The formula for the preservation of antique and vintage shotguns is the same as for other complex machines: (1) recognition of value, tangible or intangible; (2) periodic, if not regular, use; (3) routine operator-level maintenance; and (4) scheduled preventive maintenance services. For a shotgun to have survived at all for 120 to 150 years, at least one or two of these factors had to have been present for some of its history. To be well preserved, all four need to have occurred. Many of the existing shotguns manufactured during the golden age of the side-by-side cartridge shotgun, arguably from about 1865 to 1915, have not had any of the last three happen for many decades and are deteriorating rapidly. Yet most of these can be brought back to a condition where they can be used again for their original purposes and be passed to the care of the next generation.

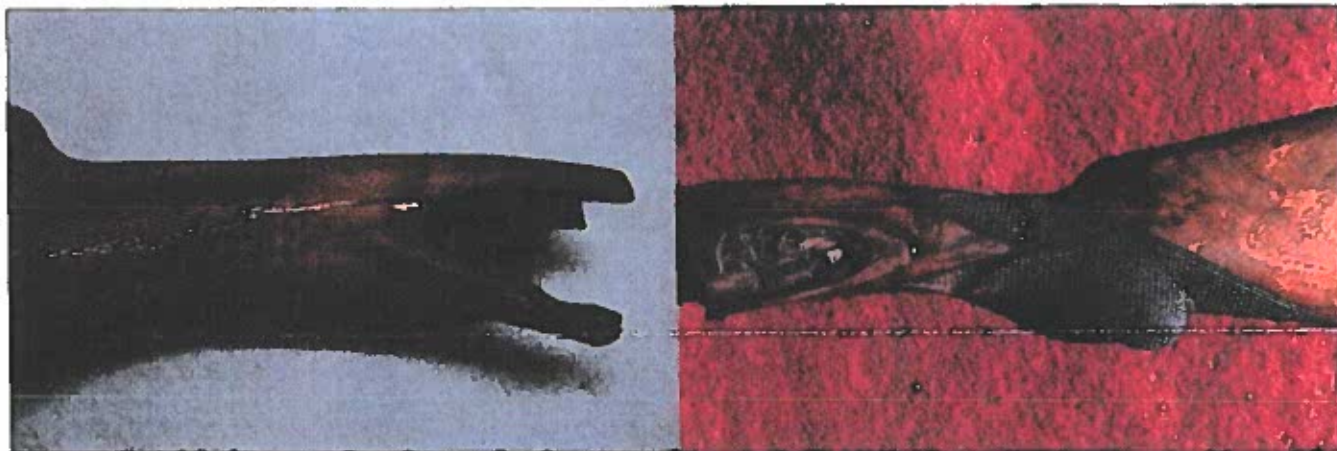
The last of the four factors mentioned above is, in my opinion, the most significant in preserving antique doubleguns that have made it this far but are now at risk. For shotguns, as with all fine machines, 100 years is too long an interval between scheduled maintenance services.

At some reasonable interval they need to be taken apart, cleaned, inspected, fully serviced, and major elements repaired or replaced before they fail completely. The British in the late 19th and early 20th century had their shotguns regularly serviced; Americans generally did not. In fact, even today many people believe that servicing and if necessary reconditioning vintage guns damages their value. This may be true for the few pristine investment-grade shotguns. But for most 19th century survivors in the hands of descendants or occasional shooters, the lack of preventive maintenance over many decades is more likely to result in damage to the gun itself and expensive, if not cost-prohibitive, repairs.

In my experience, the greatest single threat to the preservation of 19th century shotguns is petroleum-based oils that have accumulated in stocks and forearms. These oils cause the wood to soften, lose strength, and discolor. This results in concealment of the

natural beauty of the wood, excessive dents and gouges, loss of checkering, and when left untreated structural damage in the stock head and wrist. Ironically, by heavily oiling barrels and receivers and then storing guns with the butt down, owners may have contributed to the problem by their efforts to provide routine operator maintenance. Gravity carries the damaging oil into the stock. A generation ago, it was also not uncommon for owners to apply cleaning solvent and other petroleum-based oils directly to the wood to make it shiny.

This threat is insidious in that it is often not recognized by owners until there is significant damage or catastrophic failure. The first picture below (left) is from a Colt Model 1878. The damage resulted from oil entering the stock head in the usual fashion, pushed by gravity directly from the receiver into the stock head and then into the wrist. It was repaired by replacing half of the wrist and the entire stock head. The second (right) is of a W. W. Greener, which broke in half in the middle of a sporting clays competition. In this case, the oil entered into the wrist via the rear tang bolt and an old improper repair, thus weakening the stock from inside-out. This gun was restocked.



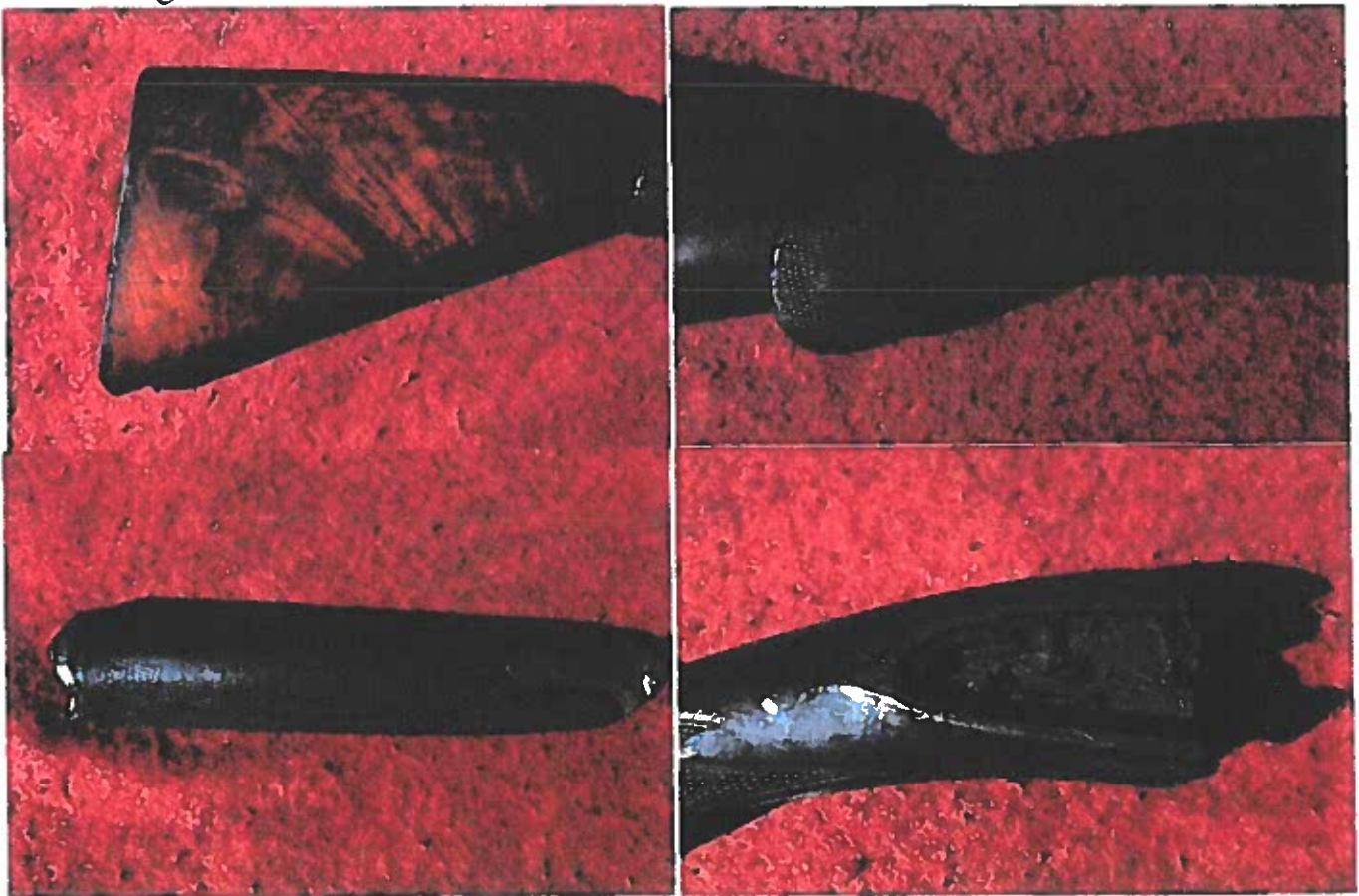
The third example, shown in the two pictures below, is the most common. From the outside, the stock head of this L.C. Smith Model F hammergun did not look too bad. The extent of the petroleum-based oil damage was only uncovered as the result of servicing the gun. Had it not been identified and addressed, a major structural failure would have been inevitable. The cost of the repairs, which involved removing the damaged wood between the top and bottom prongs and grafting in a new piece of walnut, was relatively low compared to the two guns pictured above.



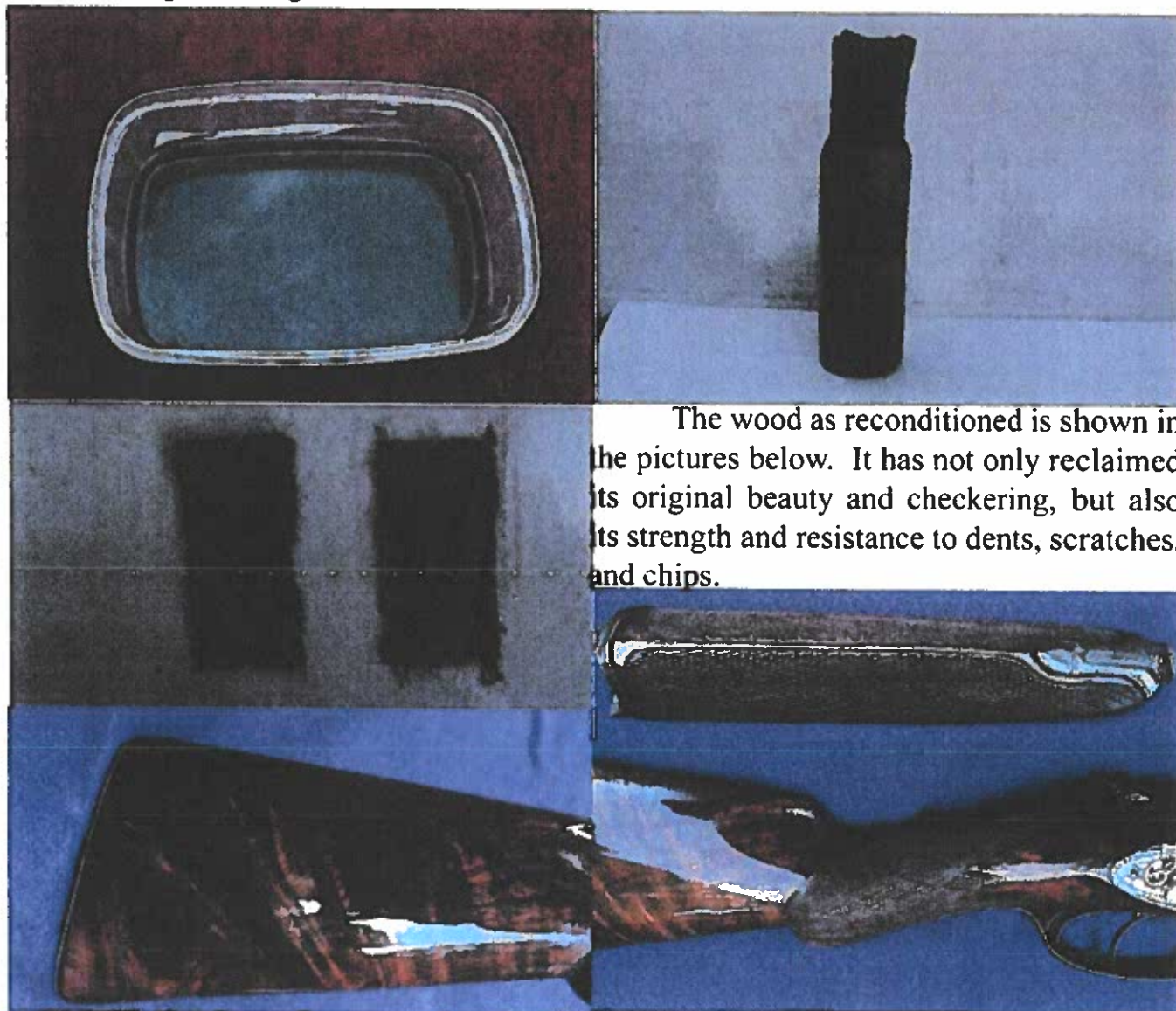
In most cases the best and least costly thing a person can do to preserve his or her antique or vintage gun is to have the wood reconditioned before there is significant damage. This is done by removing the old finish, drawing out petroleum-based oils, removing the oil-damaged wood, steaming and sanding out dents and gouges as possible without changing the nature of the gun, making necessary repairs to the wood, and restoring natural oils throughout by the application of a hand-rubbed stock-oil finish. Typically, new checkering also needs to be cut.

The majority of my reconditioning and restoration work is on fathers' and grandfathers' guns for people who want to pass them to the next generation. However, I am a gun rescuer at heart and will on occasion buy a gun, even though it does not necessarily fit into my collection, simply because it is a quality gun obviously at risk. This brings us back to the Nichols & Lefever.

Below are pictures taken before the start of reconditioning. The external signs of an oil-soaked gun are very apparent. The grain of the wood if the stock body is obscured, dents and scratches are deeper than normal, and the wood is almost black where it comes in contact with the butt plate. In the wrist, the discoloration of the wood becomes extreme. The checkering on the wrist and the forearm wood has worn smooth because the wood is soft. Basically, the checkering is being held together by the finish. However, it is the oil-soaked wood behind the locks that is the greatest threat. Without treatment, it would have taken just a few more years and half a dozen boxes of 10-gauge shells before major structural damage resulted.



The amount of petroleum-based oil that was in the wood before reconditioning is depicted in the three pictures below. The tray in the first picture shows the acetone remaining after the wood was soaked in it. The 4-ounce bottle in the second picture contains the petroleum-based oil residue that remained after the acetone fully evaporated. A significant amount of oil also was removed through the repetitive process of steaming and sanding. The third picture shows particles from sanding oil-soaked walnut (on the left) with particles from sanding undamaged walnut.



The wood as reconditioned is shown in the pictures below. It has not only reclaimed its original beauty and checkering, but also its strength and resistance to dents, scratches, and chips.

This classic gun is now ready to be shot again, but of course only with shells that produce pressures for which the gun was designed (e.g., 5,000-7,000 PSI). It is a waterfowler, and in that role only bismuth or similar non-toxic soft shot can be used. RST Corporation in Pennsylvania makes shells for both the range and the field. Personally, I hunt geese with 10-gauge Damascus-barreled hammerguns and RST shells. It adds a whole new dimension to the hunt. The challenge is a little greater, the chase fairer, and the experience imparts a sense of timelessness and connection to the past.

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[If readers have questions about this gun or doublegun preservation in general, the author can be contacted at wesbrooksd@aol.com or 703-625-4830.]