

A splayed bundle of walnut burl displaying its potential for stunning book-matches.



Interchangeable Parts

by William Rau

There is a certain cachet to saying something is “handmade”, particularly in this age of accelerated automation.

The word connotes making things in a time honored manner, using hand tools and traditional methods. That may be fine for violins or custom wood steering wheels, but how many of us would want to wait for handmade replacement parts for a refrigerator or an automobile, and

then have those custom fitted? Without interchangeable parts, that would be the old normal.

Interchangeable parts are parts that are designed to fit any device of the same type. A concept so buried in our assumption of the world, one might think they have been around forever. If a Rolls-Royce dealer orders a part to replace a suspension member on a Ghost, there is no doubt, that when properly installed, it will fit and func-

tion as the original did when the car was new. Or, if you bought a box of 10-24 machine screws from one source and fitted them with nuts and washers from another manufacturer, the underlying assumption is that screws and nuts would of course fit. No one would pause to consider the

represent the apotheosis of cutting edge manufacturing.

“I Know It’s The Right Part Number, But It Doesn’t Match”

Wood trim is a product of this sophisticated manufacturing and functions as do the other man-made

vehicles. Trim designers search the world of veneers seeking that special combination of grain and color that will help define a new look for their creations.

Veneer is produced at veneer mills where selected logs are sent for slicing



Some of the woods currently used by Rolls-Royce and Bentley.

consequences if they didn't. But this “simple” idea was startlingly new in the in 18th century, when everything from muskets to farm machines required custom hand fitting of parts. The development of interchangeable parts, and the tools and machines to make them, laid the foundation of the industrial revolution, including the nascent automobile industry.

Sling shot Eli Whitney into the 21st century to the facilities at Goodwood or Crewe, and chances are he would experience an exhilarating version of “shock & awe”; bewildered by the degree of precision and robotic control exhibited in the manufacturing of these high-end automobiles. They along with other elite automakers

interior parts in a car – computer designed and made; it fits interchangeably in doors, dashes, consoles and more. Trim pieces have parts numbers and even barcodes to facilitate the ordering of replacements. However, what man does not create are the sumptuous and uniquely beautiful wood veneers that adorn the faces of these interchangeable parts.

And therein lies the rub.

Wood for over a century has helped create the luxury car mystic. As a rolling salon; the automobile has become our second home, and as such, stunningly beautiful wood is now part of the DNA of these opulent

and bundling. Depending on the size of the log the yield is anywhere from a few hundred square feet to thousands of square feet. Consecutive slices of veneer are wrapped as bundles which usually number 24 leaves and within a given bundle, the leaves are virtually identical. For this reason the veneer for the interior of a car will be selected from one bundle, so that all the trim parts share the distinctive markings and color nuances characteristic of that bundle. Adjacent leaves will be used to make the book-matches for doors, dashes and picnic tables.

Book-matches have long been part of the design fabric of Rolls-Royce and Bentley interiors, and from my experi-

Door cap with a significant crack



Repaired



ence evaluating the wood in various luxury automobiles for a comparative testing company; Rolls-Royce and Bentley appear to be the only luxury car manufacturers employing this compelling design element. Even though luxury cars are made to the highest standards; utilizing extensive research, thorough testing and best manufacturing practices, a very small number of wood parts exhibit defects within the warranty period. Empirically, the typical defect is a single deep crack through the clearcoat.

What causes these to appear may lead to an interesting discussion of coatings and substrates, but to the dealer, the factory representative and especially the owner of the car, the important thing is what can be done about it. One thing they all agree upon is that the solution needs to be swift and seamless.

To Replace or Repair

As one might guess, there are not many options available. Of course, there is that barcode, “guaranteeing” an exact replacement part, and to a parts jockey a new part is just an email away.

Since the singular beauty of decorative wood falls into the same category of uniqueness as snowflakes and finger prints, replacement of one or two trim pieces in the interior, is a poor option. And in some cases the

part is on indefinite backorder. Now what?

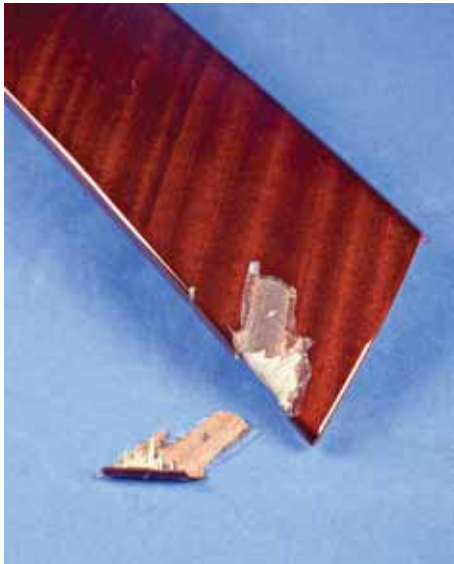
As elsewhere in life, the best solution is to keep the family together. Keeping the damaged piece with the original wood set, maintains the family resemblance of grain and color that is unique to the interior of that particular automobile. But how?

To begin with, the damaged part does have the right veneer going for

Detail of crack in walnut burl door cap



Walnut burl door cap repaired



left– Maserati door trim in ribbon mahogany. Even a good mechanic can have a “bad” day



Repaired.

it. If one could only wave a magic wand or say the magic words and erase the crack, the part would be good as new. A touch of legerdemain does play a role in the process, as does luck, but it's not just smoke and mirrors. Preserving the color is the first necessity. Micro repair at the point of the crack and global finishing of the part is just the magic the wizard ordered. As with a Beverly

Hills plastic surgeon, there can be no vestige of the procedure left behind. Now that's the ticket.

Actually, there is a third alternative to repair or replace. It is an extension of the replace the part solution. Replace all of the parts with a completely new set of wood that matches. Though this may seem to be a clear case of throwing the baby



Maserati fiber



repaired.

As could be expected, wood being wood, there was a color difference between the wenge interior and the replacement part. An exact matching piece was not available and as a last resort a new set would be installed. The service director then sent us the wenge part for what he felt would be an exercise in futility. But to his surprise, we returned the part to him in its original condition.

All was resolved to the complete satisfaction of the parties, including the customer, when the repaired part was presented to him for inspection and he couldn't tell which corner had been dinged.



Ghost fascia with chip in the wenge veneer.

out with the bath water, it has been on the table for consideration more than once. Taking the argument to its logical conclusion, if a matching replacement part cannot be provided, then one has to replace everything. (The grin widens across the face of our parts jockey as he hears this option).

Lest one think that this technique can be applied universally to the wood from any car, it is really a young cars game. Basically, the crack in the clear coat is an anomaly. The veneer and finish appear to have good adhesion throughout the pieces and that's why this type of treatment can be successful.



repaired.

Crack in elm cluster fascia.

A case in point is a Rolls-Royce customer in the Midwest who purchased a new Ghost and took delivery of the vehicle from a dealer on the west coast. At some point he complained that one of the interior wood panels was cracked. The service director contacted Rolls and received a replacement part from the factory. He then made a special trip flying out to the Midwest customer.

Creative restoration of this kind is a triple win solution:

First, it keeps the original set of wood intact.

Second, it preserves the color of the damaged part.

Third, after oven curing, the part(s) can be returned to the dealer quickly.



repaired.

