



All that's left is the aluminium rim ... and a small pile of firewood.



... knocked out with an awl. The rim should be supported as shown here, or it will buckle.



It is easiest to work on the aluminium support at this stage in the restoration.



The old rivets are simply nipped off with a pair of pliers and then ...



Although the work always causes a few scratches, the rim can now be polished.



The thickness of the old wood sets the measure for the restoration. Many customers take the opportunity to make the thin rim of their steering wheel a little thicker. Just an extra millimetre can make the wheel noticeably better to hold.



The polished spokes are protected by masking them with a strong fabric tape.



The surface of the metal rim is roughened, so that the glue will stick better.

“Seen in cross-section,” he adds, “the steering wheel rim will admittedly no longer appear perfectly round, but instead slightly oval; however, this is hardly perceptible and sometimes just one millimetre makes the wheel significantly better to hold.”

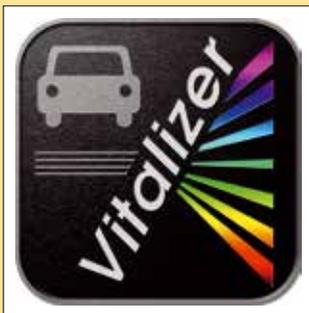
The specialist attaches one of the rings of plywood, which has been sawn out, to the aluminium support, using double-sided adhesive tape. On a copy milling machine, the wood takes on its inner and outer contours. The copying device scans the aluminium wheel rim, and the cylindrical cutter trims off the corresponding amount of wood. Once the first wooden ring is finished, the second can be done as well, before the rings are once again separated from the aluminium. For the spokes, the milling machine cannot trim off any of the material and a hand sander must be used.

The wooden rings are now perfectly matched to the curve of the steering wheel rim and make their way back to the milling machine for a second time. Depending on the measurements, a suitable milling head with a semi-circular shape creates the contour of the rim. And so two semi-circular wooden rings are produced. “Depending on the quality of the materials used, tiny defects can sometimes be seen in the wood, but these can be made good with wood filler.

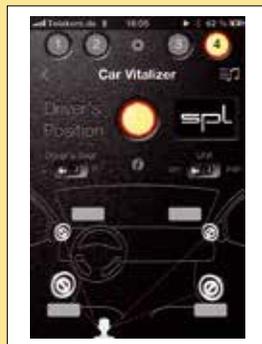
## Using apps to make the most of your sound

SPL (Sound Performance Labs), based in Niederkrüchten in North Rhine-Westphalia, will surely be known only to a few people today, who work professionally, or as a hobby with recording studio equipment. Their sound engineers have released a clever tool to optimise sound reproduction in cars. Called the 'Car Vitalizer App,' this is available to download from the Apple iTunes App Store. Its key feature is that it will work with a completely standard radio. The only important thing is that you need to be able to connect the smartphone on which you have installed the app to your car radio, using an AUX input or Bluetooth connection.

Now (by means of easily configured settings, which are quite independent from the actual interior acoustics of the car), you can adjust the all-round stereo sound, the balance of bass, mid- and high-range frequencies ('true loudness'), or just the bass performance. A particularly nifty feature is the individual 'Driver's Position' setting. To use this, you measure the distance from the car's loudspeakers to your head, and enter these into the app. To make the best possible use of the 'Car Vitalizer,' and to protect your radio system from distortion, you should set all the sound settings to their neutral or mid-position and, without fail, switch off the loudness function. A test carried out, using a radio pepped up with the 'Car Vitalizer' app in a modern classic, gave an amazingly crisp and dynamic sound. For results like this, it's money well spent!



SPL's audio specialists from North Rhine-Westphalia are right at home in the recording studio. Their 'Car Vitalizer App' transforms a car's interior into a concert hall.



The screen showing the 'Driver's Position' menu. Here, you enter the distance from the individual loudspeakers to your head.

Nowadays, a whole raft of manufacturers have latched onto the retro trend, and supply complete car radios, with all the latest features, but a classic look. One of the suppliers with the biggest range is the US manufacturer RetroSound ([www.retromanufacturing.com](http://www.retromanufacturing.com)). Three basic sets, each with different features, eight main designs, 58 front panels, and more than 30 types of knobs and buttons, ensure that countless variations are available, which should suit every classic car. Up-to-date connections, such as AUX input and Bluetooth, are mandatory. Local distributors can supply amplifiers and loudspeakers for many models (typical prices can be found on the web). As well as the version with a digital display, which may be rather intrusive for sensitive eyes, there is also an 'analogue' version (the 'Classic' model) with a traditional tuning scale.



RetroSound's basic set can be adapted to suit any dashboard, with different front panels and tuning knobs.



Just a few of the front panels on offer. Altogether, 58 different versions are available.



Which knob would you like? You can choose from 30 different designs.



Modern technology in classic attire: a complete unit from RetroSound. A version with an analogue display is also available.



ATG's plastic dye is suitable for use on many interior parts.



The dye is best applied with a sponge. "Dab it on, don't spread it on" should be your watchword.



From brown to grey. Sometimes, several applications will be required.



Cigarette burns in the carpet? With this kit – which is amazingly easy to use – it's almost as though they never happened. Damage to fabric seats can also be repaired.

We selected the appropriately coloured fibres for our blue-black carpet.



The fibres are thoroughly mixed together with the metal ball in the mixing tin.



About two-thirds of the fibres are mixed with the 'Clear Air Dry Adhesive.'



At first white in colour, the glue later becomes transparent.



The mixture of glue and fibres is inserted into the burn hole.



The fibres straighten up as they pass through the sieve.



As you can see, the burn hole can hardly be noticed.

## Carpets and upholstery

A repair kit is available, too, for holes burned in the carpet or upholstery. It comprises several small pots containing textile fibres in different colours, some glue, some wire mesh, a small spatula and a piece of cotton fabric. First of all, the desired colour to match the carpet is mixed together from the different fibres, which are still dry; in our case, a mix of blue and black. To help mix them together, a small empty plastic container is provided. When the shade is right, about two-thirds of the fibres are mixed together with the white glue, and the tear or hole filled. (At first white, the glue will become clear as it dries; it therefore only affects the colour temporarily.) As soon as the hole has been filled, the remaining (dry) textile fibres are spread over the wire mesh, which works like a sieve and straightens the fibres. For this reason,

you should hold the sieve as tightly as possible against the spot being repaired. The area treated in this way can hardly be recognised, and after a short drying time you can blow away, or vacuum up, any surplus material.

Does that sound too adventurous for you? Well, it works brilliantly. The fibres spread over the mesh nearly all fall into place vertically, and follow the pile of the carpet or seat covering. If the colour is a good match, the repair can only be seen under very close examination. Once again, it's worth doing a dry run on an invisible section of carpet or upholstery. For the modest outlay entailed, the result is really amazingly good. The piece of cotton fabric provided is used (with the glue) only for larger holes. A tear can first be backed up with this material, for example, to provide the basis for filling it with the textile fibres.

# HOW TO RESTORE CLASSIC CAR INTERIORS



The dye – which does not completely cover the surface – is available in 46 shades. The number of applications determines in part the colours depth.



The dye is applied with the sponge, which evens out slight or moderate marks.



The 'Leather Protector:' once cleaned, the material needs to be protected from the effects of the environment.



One more go with a sponge: although naturally colourless, the 'Leather Protector' very slightly darkens the surface of the leather.



The 'Leather Repair Kit with Leather Dye' includes the cleaner, dye, protector and sponges.



Before and after: the treatment of the seat on the left took a good hour. But the comparison with the other seat really motivates you to keep going.



Our second test: this seat from a Mercedes Cabriolet is one for the experts.



The leather is rock-hard and must be taken off the frame before it can be treated further.



Only then can the softener be applied to the back of it. Those parts which have been fed are left out.



It's generally easier working with the seat cover once it has been removed. The original colour is on the right.



If necessary, apply the softener a few more times.



Once the softener has really worked its way in, any grease can be removed from the surface with a solvent.



Small cracks are also filled: in this case, with liquid leather filler from a tube.



The time adds up: it can take a couple of hours before all the cracks are filled.



The base coat is rubbed into the leather by hand. Subsequent coats ...



The mould can also be made out of different materials.



The most important thing is that it should be tightly sealed (here using silicon sealant), so that the moulding compound cannot leak out.



Keeping things apart: release wax is brushed onto the original part, so that the moulding compound ...



... does not subsequently stick to it. The same principle applies to the inside of the mould.



The moulding compound is mixed in equal parts with the hardener and thoroughly stirred together.



So far, and only so far: under no circumstances should you pour the compound above the broadest part of the knob.



After the compound has dried, two locating pins are inserted, then everything is coated with release wax again.



The cover is now poured in above the separating line formed by the release wax.



The original is removed at the separating line, and the cavity filled from below with synthetic resin.



Once it has dried, the replica can be painted in the colour of your choice.