

The Reincarnation of a Cracked

Steering Wheel Hub

By John Logan

Edited by Jeannette Hartman

Face it, to Sunbeam fans, one important thing that separates the pedestrians from the road warriors is the steering wheel in your hands.

The sidewalk set sighs with admiration at the sight of those smooth, glossy curves and purring sounds as it rolls down the street.

But many of you, with the feel of the pedal under your right foot and the vibes of the engine, look through the steering wheel and see the . . . cracked steering wheel hub.



If your Sunbeam's steering wheel hub looks like the photo above, it's a victim of a natural aging process. The Bakelite and hard rubber of the '50s and '60s just wasn't as stable as today's plastics. They continually outgas like ice cubes left too long in the freezer.

The plastic on the steering wheel has to crack because it's restrained by the steel structural cup inside.

So, what to do?

The Outsourcing Option

For \$300, you can get a recast hub from Ken Corbin of Aurora, CO. For another \$300, you can get the wood rim replaced by his partner. Richard Fritz reported on this in the October 2009 *Rootes Review* with pictures. It appears to be a great restoration.

Ken can sell you a completed wheel or supply you with a restored wheel reduced to 14 1/2" for \$650. He can be reached at creedo@ix.netcom.com or 303-364-5787.

The Do It Yourself Alternative

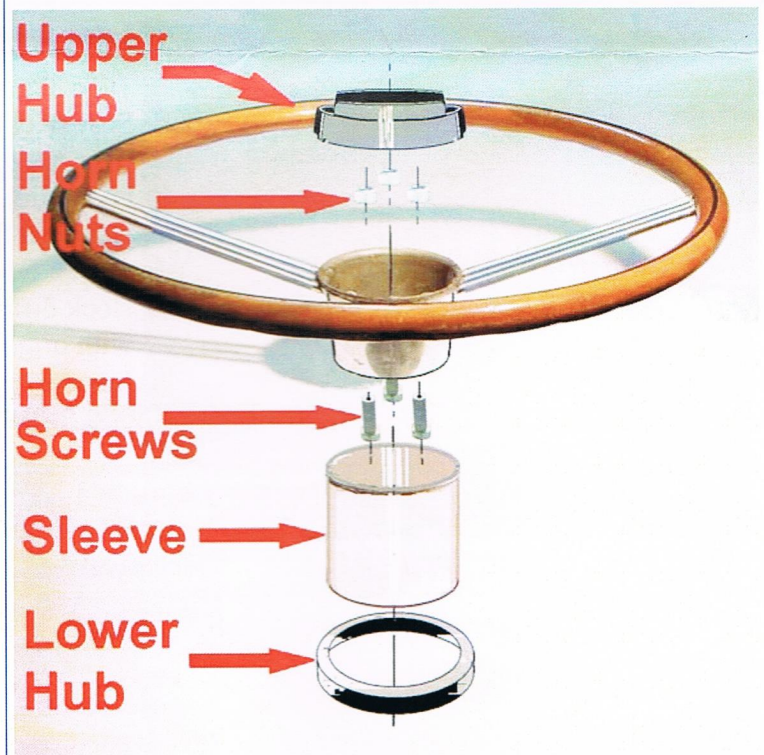
If you like a challenge, there's another way. (Warning! If you are not reading this article in solitude, I suggest that you put on those Foster Grants to hide the gleam in your eye – or alternatively, encase this issue in a plain, brown wrapper to avoid the notice of those in your life who have seizures when they hear the words "Sunbeam" and "new project" used in the same sentence.)

The DIY alternative only takes about \$25 for materials and the time and talents (yours or a friend's) to machine with a metal or wood lathe, drill and tap a thread, saw accurately, use a press, glue, file, sand and paint.

be replacing the cracked plastic with new components (see below): a sleeve made from a 3" aluminum tube pressed on the wheel's structural cup and held by Plexiglas sections above and below that are glued together. Three drilled and tapped screws with nuts replace the cast-in threaded inserts of the original hub.

A Special Tool

A Special Tool is recommended for clamping parts together. It consists of two 1/4" thick plates at least 4-1/2" square with 7/16" holes in the center, a 7/16"-20 x 6" grade 5 threaded rod with nuts and a 3-1/2" x 4" tube.



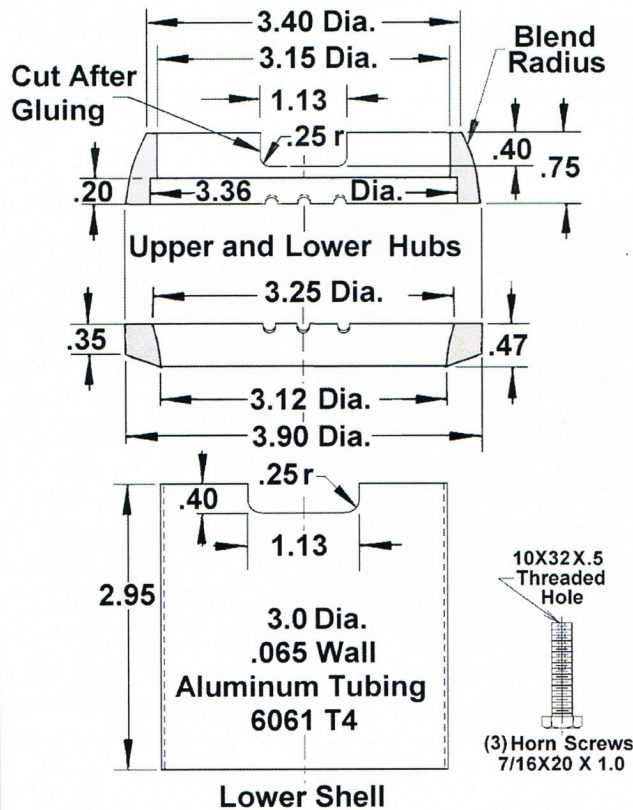
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The Step-by-Step Process

1. Remove the old plastic.

If the wheel has a good rim protect it with foam pipe insulation. Then pry off the old cracked plastic. You may have to saw cut it off.

Clean the structural cup with remover and sand it so glue will stick to it. It's now good to go.



2. Fabricate the Parts

The following schematic explains it all. Just make the parts according to the drawing. To the ordinary person, this might sound complicated but to a Sunbeam DIY owner, this is just part of ownership.

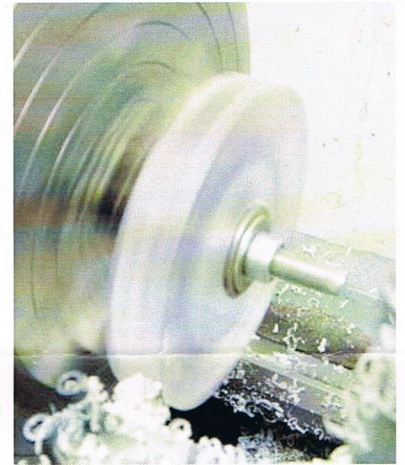
Adjustments to the drawing dimensions were made to compensate for the shrinkage.

A. Cut the Shell



After squarely cutting the 3" aluminum tube, rough sand the inside so glue will stick and finely sand the outside until it's smooth.

B. Machine the Hub Sections

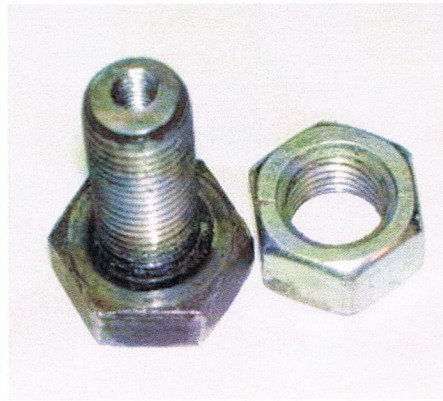


Machine the upper and lower hub sections according to the drawing. Plexiglas makes a very good material because it is stable, easy to machine and glues very well with Acrylic Glue (Methylene Chloride). Test some sample glue joints first to make sure you are using the right glue for the plastic.

After machining, remove the gloss on the mating surfaces of sections with fine wet sandpaper and make sure they meet flat with each other and the diameters will align when glued.

Using the Special Tool, temporarily clamp the two sections together, mark where the spoke holes should go and drill the six holes at an angle that matches the spokes. Use a drill bit that is about 1/32" smaller than the spokes so that you will have some material to accurately file to fit the hub sections to the spokes.

C. Drill and Tap the Horn Screws

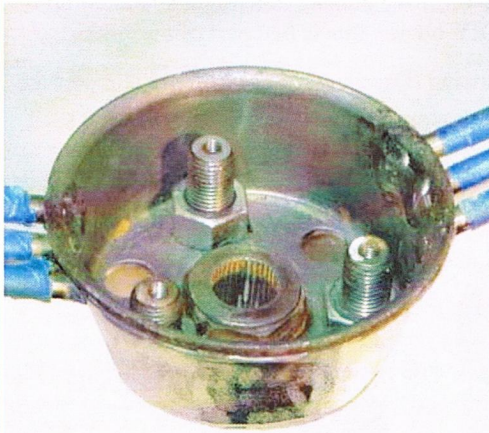


Drill 0.1590" holes 0.9" deep into the end of three 7/16"—20 x 1" screws. Tap the holes for the #10x32 horn ring screws.

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3. Assemble the Components

A. Assemble the Horn Screws in Cup



Install the three horn screws in the round holes of the wheel cup. Through trial and error, make sure they align with the holes in the horn ring. The heads of the bolts may need grinding and the holes filed to get the bolts installed in the proper position.

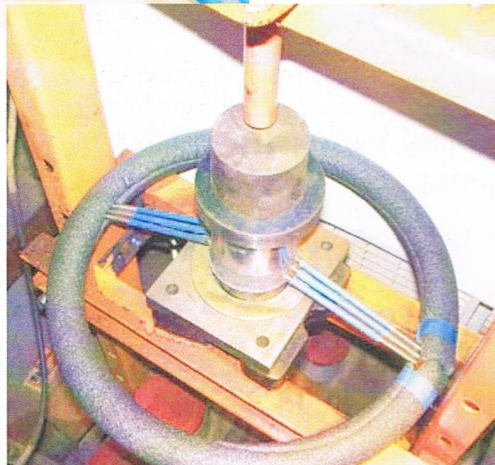
Torque the nuts very tight because this will be the last chance you get to wrench on them.

B. Press the Sleeve onto the Cup



Push the sleeve on the cup to test the fit and set up the fixturing to press it. Take it apart and apply the great "slow setting" J-B Weld glue (or an equivalent two-part epoxy non-running glue) to the cup and sleeve contact areas.

Align the cut-outs of the sleeve with the spokes and press the sleeve onto the cup. A press is shown above but the Special Tool with the help of some large clamps may also work for this process. The top edge of the sleeve will expand as it is pressed. Stop when the cutouts touch the spokes. A slight splitting at the cutout radii is acceptable.



C. Glue the Hub Sections

This is the most critical step in the process. Use J-B Weld to glue the hub parts to the sleeve and use Plexiglas Glue to glue for the two hub sections.

Fit the two sections to the sleeve and file the inside diameters and spoke holes as needed until they fit, making sure there is material left to glue between the spokes.

For ease of handling, glue the lower hub section to the sleeve first. Apply J-B Weld to the inside diameter and the sleeve, making sure there is enough to fill the cavity between them.

Keep the J-B Weld off the hub section mating surfaces.

Use the Special Tool to tighten the lower hub section against the sleeve. Allow the J-B Weld to harden for about 24 hours and then make sure that the upper section still fits.

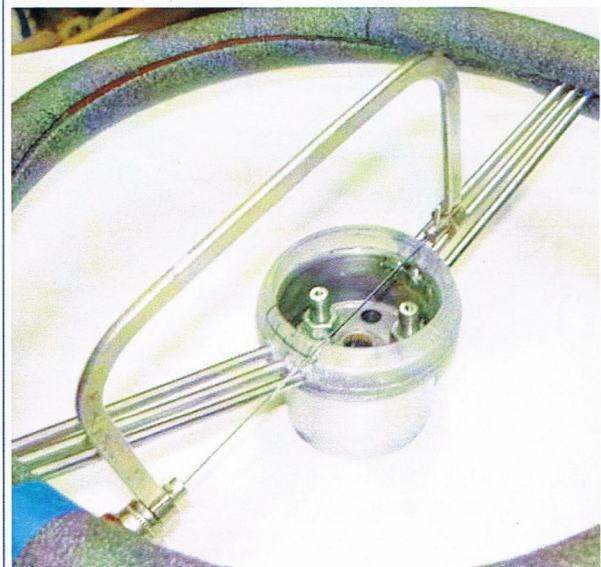
Use the Special Tool to tighten the lower hub section against the sleeve. Allow the J-B Weld to harden for about 24 hours and then make sure that the upper section still fits.

Next, apply J-B Weld sparingly to the inner surface of the upper section where it contacts. Again use the Special Tool to clamp the halves tightly together. While tightening the Special Tool bolt, make sure the outer diameters are aligned. Allow the Plexiglas Glue to dry for 48 hours on the cup edge. Apply lots of the Plexiglas glue to the hub mating surfaces, paying particular attention to the plastic between the spokes.



D. Saw the Horn Clearance Notches

The horn ring notches were left until after gluing to make sure there was enough structure in the part. Mark and saw the notches according to the drawing.



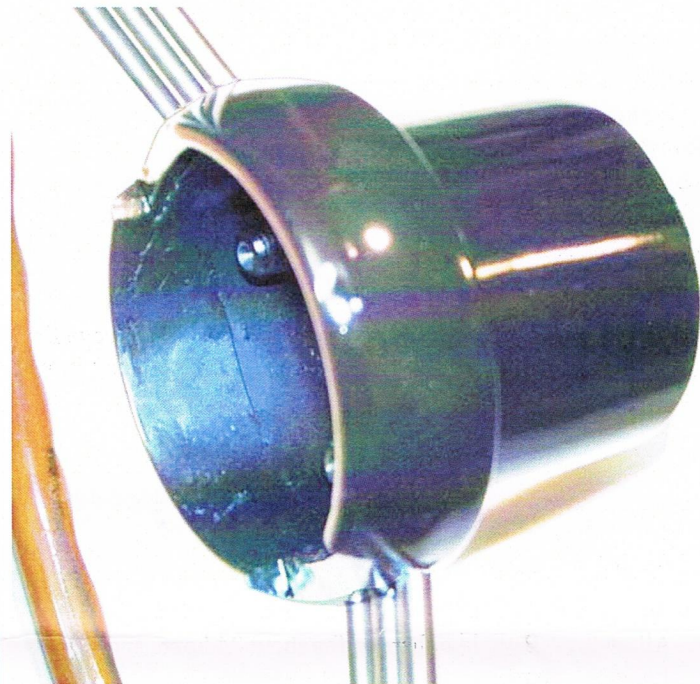
Don't go too deep.

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4. Rattle Can Finish

Sand all the seams until they are smooth and then final sand the hub with wet 600 paper. Prime it several times and apply several coats of gloss black.

Voilà, a restored Sunbeam steering wheel hub!!!

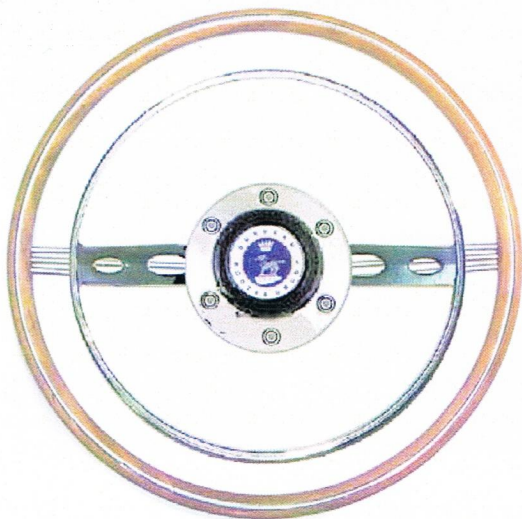


Options

What would Sunbeam restoration be without options?

Materials such as PVC or bolted aluminum can be used in place of Plexiglas.

If you are willing to be creative and deviate from the original look of the wheel, a hard wooden burl hub finished to match the rim or dash might look good.



Here is another idea. This method could be used to build a wheel that combines the harp-spoke with a modern hub like this.

Bright Holiday winner



Last month's cover photo (above) was a wreath my wife and I created for a contest at the America on Wheels Museum in Allentown, PA.

The wreath had to be artificial, 18" - 24" in diameter and have a theme; ours was "Wheels of Dreams", asking the question what would be your dream car.

Well, we won second place, a gift certificate for \$50 to the museum store. First prize was \$100 cash, a nice sum to have during the holidays, but not for us. The wreath that won was submitted by a company and really didn't have a theme. I think they stuffed the ballot box!! (Sour grapes, anyone?)

The voting was by visitors to the museum, similar to a popular vote.

If they have the contest next year we are already thinking about our entry. If you are close by why not enter a wreath yourself? Details will be available at:

www.americaonwheels.org

Articles

We hate to keep harping on this, but we always need articles so we can present you the best newsletter we can publish.

Like we say, you don't have to be a Shakespeare or Hemingway to submit something. A few notes with photos will give us all we need to make you a literary shining star.

Details about the photos, your name, the name, location and date of the event is about all the info we need.

So PLEASE help us out!!!