

Restoring the MGA Factory Aluminium Hardtop

by Roger
Bailey



My hardtop came attached to a rust-bucket parts car. It is fair to say that the top was, even in its dilapidated and dented condition, worth more than the car. Fortunately, the top was very complete: the headlining and trim were there, and the rubber window seals and side screen sponge seals (perished as they were) were all there. The rear window, stained, scratched, and anything but see-through, was present. The only missing parts were the J-hook clamps that hold the sides to the soft-top frame pivot bracket. These were reconstructed from the only photograph I found that showed the attachment method.

The project resolved itself into five elements:

- * Searching for an acceptable headlining cloth substitute, and the removal, copying, and reinstallation of same;
- * Having the dents removed and the shell painted;
- * Locating acceptable solid rubber and sponge profiles for the windshield, side screen, and rear window seals;
- * researching and fabricating the J-hook hold-downs, and rechroming the hold-down brackets;
- * restoring the rear window.

I began by photographing the top in its original condition. These photos were especially valuable since great amounts of time were to elapse (i.e., time spent restoring the 1957 MGA itself) before the top would be restored.

The J-hook brackets had to be removed first because they prevented removal of the covered side trim panels. This was the first major challenge; the countersunk $\frac{1}{4}$ -28 slotted head screws were well and truly rusted in place. I worked away for days with releasing oil and hammer blows to the screwdriver, but to no avail. Becoming brutal would have ruined the possibly irreplaceable screws. After drilling out the rivets holding the stainless gutter trim to the hardtop, I opted to cut into the rear edge of the side screen opening with a Dremel, in an area that would be covered by the stainless trim and sponge seal. The screws are threaded into captive square box nuts and heat could be applied to the nut box through the opening. The screws were salvaged for rechroming, and I used a nut box left over from the cockpit rail, fastening the box by rivets.

The stainless gutter polished up beautifully with a buffing wheel and rouge. The sealant between the gutter and the hard top was removed using one of my favorite tools, the 3-M fiber wheel. The J-hook hold-down brackets and rear clips (for clipping the top to the little chrome "mice" found on the rear scuttle), together with their screws, were removed and rechromed. These clips are held by two short 10-32 chrome Phillips screws that engage a tapping plate, and a longer screw that passes through the lower end of the stainless window reinforcer/divider rails, and is secured with a chromed dome nut. The divider rail seems primarily a decorative device, since the rubber bulb profile that is seated in it barely touches the Perspex window. Conceivably, these reinforcers might resist efforts to push the window into the car but, in view of the tough rubber seal that holds the window, it is hard to imagine the forces involved. The rails were buffed on a wheel, and the steel inserts at either end were removed and rust-proofed.

With these brackets now removed, the two side trim boards and the front bow trim board were removed. The side boards act to

cover the glued attachment of the headlining, and are secured by chromed, self tapping trim screws and cup washers. Similar screws hold the bow trim board in place and also hide the nailed headlining attachment to the wooden bow. This bow is similar (perhaps identical) to that used for the soft top.

Beginning at the bow, I extracted the tacks and then, with a hard-backed razor blade, eased behind the headlining cloth as it attaches to the aluminum side plates. The first roof bow was now available. I proceeded to remove the tacks holding the web of headlining cloth to the wood, and then moved on to the second and third roof bow. The final panel of fabric is glued to the window frame and trapped by the window seal. I removed it gently with a hard-backed razor blade.

Below the rear window is a section of headlining fabric glued to the aluminum and trapped under the window seal on one edge, and under the rear scuttle seal range on the other edge. In my view, the window seal should be removed in order to properly trim the fabric. I suspect any attempt to avoid removal of the window will make for serious trim finish difficulties and a poor looking job.

I removed the rubber scuttle seal and unscrewed the three track sections in which it runs. I gently pried the window molding away from the hardtop. Do not try to pry the Perspex from the rubber. Cut away the seal as necessary to make an access point. Slip flat wooden wedges behind the rubber as you work. Do not use screwdrivers! In my case, the rubber was so far gone that I could push the entire window out by hand. (A far cry from the performance required to reinstall the window later.)

The headlining cloth can now be carefully detached from the window frame, and the trim below the window similarly salvaged for copying.



Stripped hardtop with some glue still to be removed

Hardtop Historical Notes

compiled by Roger Bailey

Facts surrounding the creation of the factory hardtop are scarce and contradictory. I have scanned magazines from the period and researched numerous books on the MGA. What follows is all that I was able to unearth. Anyone with additional information is encouraged to share their knowledge.

An official promotional photo of two members of the fair sex handling the aluminum top, was first published October 12, 1956. This photo is shown in *MGA: A Pictorial History* by John Tipler, Crowood Press, and again in Bob Vitrikas' book, *MGA: A History and Restoration Guide*, Scarborough Faire, 1980. Vitrikas discusses the fiberglass hardtop option being available "...in early 1956," and that these were the "inspiration for the coupe's design." He adds, "There were a few aluminum hardtops made, but these were for the competition cars," and again, "In fact, the very first hardtops were made for the Alpine Rally in 1956 so that the cars could compete in the GT class" (p 205). (Other sources state that the aluminum top was made in larger numbers than just "a few.") Vitrikas also mentions the two bars fitted to the rear windows were needed to brace it against the suction trying to pull the window out at high speed, "just as on the coupe" (p 205). These bars are on the inside of the rear Perspex window, and appear primarily decorative, however they are firmly fastened to the aluminum at their top and bottom and may have been designed to provide rigidity to the opening to keep it from flexing and causing the window to pop out.

The only items missing from my hardtop were the rear hold-down J-bolts and knurled nuts, so I was delighted to find, on page 169 of the Vitrikas book, the only picture of that assembly I have ever seen. The photo, from a discussion of the Sebring cars of 1960, shows the method of attachment to a simplified form of the soft top pivot bracket. Fortunately, the same method works on the standard soft top bracket. A photo on page 170 clearly shows the hardtop fitted to a twin-cam roadster UMO 96. The history of UMO 96 was interestingly retold in *Classic and Sportscar*, August, 1994, with many beautiful color shots. The car, found derelict in New York (sans engine, but with hardtop), was returned to the UK, and restored to its full racing state by Brown & Gammons. Evidently, the hardtop-equipped roadsters were no longer entered for the 1961 Sebring meet, since a photo of that event clearly shows MGA coupes in use. Vitrikas

Next, I took off the sound-proofing/insulation sections glued to the roof between the roof bows. I wore a dust mask and eye protection to remove the old glue using the 3M fiber wheel. The dust was vacuumed off and the aluminum washed with a solvent. This sound deadening/insulating fiber was replaced with aluminum-faced heat insulating material from J.C. Whitney. (Incidentally, I also used this material for making a coupe-like bulkhead heat insulating pad – shhh! Don't tell the judges, but it makes for a really comfortable drive – especially if you have a hard-top.) The material was cut such that when glued with contact cement, metal side to the aluminum, there was a gap between the material and the wooden bows. You need this space to tack the headlining cloth "margin" to the side of the bows.



The method of splitting and rejoining the front bow.

Removing the front bow should not be attempted unless, as was my situation, the wing bolt nut was stripped on one side of the bow, and the supporting wood was rotted away on the other end. If threads alone are the problem, by all means try Devcon thread restorer before taking the bow out. Removal of this bow was very difficult because it was clearly built in as the hardtop was fabricated. The curvature of the roof and the aluminum side panels conspire to block removal. To get it out required a somewhat frightening bending of the aluminum side panel, but was aided by the wood rot at the end of the bow. Putting the bow back in seemed impossible without splitting it in two, and even then the task was no breeze. I removed all old nails and restored the bow, then cut the bow with a tenon saw, making a lap joint. The horizontal kerf must be shimmed back to produce the original bow thickness; I used a piece of plastic. Two ¼-20 bolts were used to re-fasten the joint. The inner lap was drilled and tapped, while a clearance hole was drilled in the outer lap and kerf shim. The bolt heads were slightly countersunk into the wood, and the metal ground flush with the surface. The threaded section extends only far enough to allow the washer, lock washer, and nut to be attached. The two sections were now installed and bolted together. The bow was re-fastened through the windshield lip with small countersunk wood screws.

The top, now being free of all attachments, went to be straightened and repainted. A problem later surfaced, which I will spare you. Make sure that after straightening, and with the rear brackets temporarily attached and the windshield frame to hardtop sealing sponge gasket laid in, that the top fits down evenly on the windshield and secures properly with the wing bolts. In my case, after the top received a wonderful de-denting and paint job, and was completely finished, I discovered that the top was "racked" just

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enough to make it hard to secure via the wing bolt on one side. Too late to do anything about it now!

While the top was being beaten into shape, there was time to restore the Perspex window. The window had a fairly scratched up appearance. A few scratches on either side were relatively deep, while the majority were abrasions and scuffs, rather than deep scores. I used Maguires Mirror Glaze #17 and #10 plastic scratch remover and plastic polish. I found this material rather sticky and difficult to buff off, but it worked adequately. I used a Dremel with a small buffing wheel to burnish the deeper scratches. Do not bear down hard, or run the Dremel at high speed; it's very easy to melt the plastic surface, and the wheel throws off the polishing liquid. Keep plenty of Maguires liquid on the wheel, and hand buff frequently to observe the progress. You will need to go over one side completely, hand rub, and polish, before turning to the other side. You will not "get 'em all" the first time, but the second side will be easier to see scratches on. After the second side, one returns to the original side again, and repeats the process. Many passes were required. Some-time afterwards, an aeronautical enthusiast gave me a bottle of Markley's AllClear windshield polish. I found this to work very well, and it was easier than Maguires to remove. If you have the misfortune to have an unrestorable window, Todd O'Dell regularly advertises replacements in *MGA!* "Marketplace." (See my parts list at the end of this article.)

With the newly painted hardtop sitting on a soft surface at a convenient height, the next job is to install the headlining fabric. The original fabric is unobtainable, but I found an acceptable substitute from Acme Auto Headlining Company. From the original fabric, the copying and stitching work was ably performed by my wife and her cousin. This is a job for the expert seamstress – it's not a guy thing. I marked the center of the wooden bow nearest the rear window and approximated the center of the fabric. With the top upside down, and the leading edge towards you, I temporarily tacked the margin of the first seam to the bow. The idea was to have the seam line just above the wood, and at the same height all across the bow. I made several adjustments to the alignment, and made certain of the centering, before placing wide headed tacks about 1" apart. Contact glue was used to adhere the rear fabric flap to the upper window frame bringing the fabric beyond the edge of the opening and trimming the surplus with an Exacto knife after the cement dried. (Be sure to spread the adhesive evenly to avoid lumps, and along an even line to avoid waves in the contact line. Start from the center, working outwards, and keep enough tension to position the stitch line vertically along the wooden bow.)

At this point, I left the sides until I had completed each of the wooden bow attachments, all the way to the front of the hardtop. For the sides, I held the side trim pieces in place and marked the lower edge on the aluminum. I glued no further down than within $\frac{1}{4}$ " of that line because I did not want attached fabric that was not covered by the side trim. Tensioning as I went, I glued the side of the headliner to the aluminum side plate, with excess to be trimmed later. I found it helpful to do eight inches along one side, and then the corresponding eight inches along the opposite side. This tended to keep the tension even, and reduce wrinkles.

The cloth was attached to the rear sections in the same way. As I approached the joint in the aluminum at the outside of the lower window opening, I terminated with a folded edge on both sides of fabric. The inside of the fold was glued to ensure it lay flat. The fabric that covers the area under the window was now glued in

place, and terminated in a fold also. Finally, I wrapped and glued the fabric onto the rear scuttle seal lip.

The stainless steel rain gutters were cleaned and polished, and reattached with $\frac{1}{8}$ " aluminum rivets. A line of silicone rubber caulk ensured a good weather seal between the hardtop and the gutters. I measured the sponge rubber around the side curtain opening, and allowed an inch overlap at each end. Better still, if you can place the hardtop back on the (well-protected) car, you will be able to trim the exact amount needed to touch the windshield frame and cockpit. A coating of adhesive was applied to the inside of the rubber and to the hardtop. It was possible, by bending back the sponge, to roll the surfaces together and thus ensuring that the sponge seated down properly on the fin of the opening.

The front bow and inside trim boards were now installed. The two side trim boards and the front bow cover were re-made from $\frac{1}{8}$ " Masonite, holes transferred, and then covered with the cloth. New chrome finishing screws and washers were essential. The originals are quite small, and not the size readily found in a hardware store; purchase them from your favorite MG parts supplier that offers coupe trim. Using a needle, I gently probed for the existing aluminum holes through the board and transferred the holes. The sides "engage" the ends of the front bow trim board and the front-most screw is important in making a tidy fit. I then attached the L-shaped hold-down brackets to the inside of the hardtop at the rear of the side boards.

After cleaning and painting the three rear scuttle sponge seal tracks, they were reattached to the hardtop. The seal was installed by working the foot into the track using a thin (not sharp) flat-bladed tool. (If you have to remove the window, now is the moment you have been dreading.) The new seal rubber has to be made in the form of a "D." It is not an oval like the coupe uses. The outer, lower corners have a compound angle, the face angle of which is slightly less than 90 degrees. I found no cute way of doing this task. I dissected the old seal to get an idea of the angles, and left enough spare material on the new seal to whittle the mating surfaces to an even fit. I fit the seal to measure the two lengths off, allowing adequate for trimming at the splice. Remember that the splice is on a curved corner and its best to fit and glue this splice actually on the hardtop. I used a modern crazy-glue type of adhesive suitable for rubber, and glued the join progressively, holding each section tightly by hand for 5 minutes each. Then I carefully fit up the rubber around to the other corner and prepared that splice too. I rechecked that the seal was fully engaged on the hardtop all the way round before gluing the second splice.

I found no use for lengths of string inside the rubber seal, but prepared for the window installation by having a set of screwdrivers, a cup of soapy water, a rubber mallet wrapped in cloth, and two pairs of extra hands. Working from the outside of the hardtop, and beginning at a corner, begin to inset the Perspex. Extra pairs of hands now held the top still, and helped keep pressure on key places. The inside of the rubber was kept well soaped, and I eased the window under the rubber with my finger or, very carefully, with screwdrivers if necessary. I kept pushing the Perspex into the corner as I worked towards the center, alternating back and forth between upper and lower seals. The most difficult part was the second and final corner. (It may be better to stop and come back later if your hands are tiring.) I used the padded mallet to pop the seal into place. Regardless, patience was absolutely essential to what became a two-hour process. I filled any cracks in the corner splices, both inside and out, using black rubber sealant.

With the seal in place, I cleaned up any stains on the top and fabric before attaching the stainless separators and rear hold-down tabs. Again I used a needle to locate the screw holes in the wood blocks. The sponge rubber window frame gasket across the leading edge was added, and I made separate pieces to handle the curved corners. Finally, I checked the fit on the car for a good weather seal, and the job was done. ♦



If you need further information, you may call me at 413 572 1775, or e-mail to <rnjbailey@gen-x.net> By all means, share any historical thoughts on the factory aluminum hardtop with *MGA!*

Sources, approximate prices, and comments.

Seals: Edgware Motor Accessories, 94 High St., Edgware, Middlesex, HA8 7BN, UK; Two meters No.754 (\$15), Two meters No.94 (\$25), and 1.5 meters No.150 (\$28). Excellent service and turnaround.

Rear Window Gasket: Brown & Gammons, 18 High St., Baldock Hertfordshire, SG7 6A5, UK; 3.5 meters, Part No. AHH 5661.

Headlining Cloth: Acme Auto Headlining Co., P0 Box 847, Long Beach, CA 90801; Three yards, No. 6407B (\$40). Good service, and the only fabric that came close to the original. One could also look at samples from such as Brown & Gammons, Moss, etc., that offer coupe headlining kits. Check for proper size and amount.

Soundproofing Felt: J.C. Whitney and Co.; One roll. You will have plenty left over, with which to heatproof the bulkhead of your restoration project!

Plastic Window Polish: Maguires #10 and #17 MirrorGlaze; Markley's All-Clear Windshield Polish.

Replacement Rear Window and Seal: Todd O'Dell, British Columbia, Canada. 604 463-1649

Miscellaneous:

Carpet tacks for attaching headlining to wooden bows. 1 box.

Contact Cement, 1 quart.

3-M fibre stripping wheel for cleaning glue residue.

½" Masonite 4' x 8' sheet is better to ensure the two sides and front trim pieces can be cut.

Small diameter trim screws and washers. Clark Spares, Moss, and others. About 30 pieces.

Chrome wing-bolts (2). Moss and others.

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mentions that only the sliding type of sidescreens could be used, and that the original flap type screens would not fit the hardtop. The reverse is also true and, annoyingly, the sliding sidescreens do not even fit into the storage pockets.

According to Anders Ditlev Clausager's *Original MGA*, Bayview Books, 1993, the aluminum top was made from June 1956 to June 1960 by Vanden Plas, a BMC subsidiary. Company records revealed that 1450 were produced. (The Vanden Plas name is still seen on Jaguar's high-end XJ models.) Clausager states that the fiberglass version was made by Universal Laminations Ltd., for introduction with the 1600 in May of 1959 (p 92). Looking at the elegant construction of the aluminum version, one could imagine that its cost was prohibitive, and that Universal rose to the occasion. No production figures were offered. Clausager thus disagrees with Vitrikas, and I think the evidence supports the former. An excellent photograph is on page 93. Brent Olsen showed us a nice shot of what appears to be a Universal or Dynaglass hardtop fitted to his 1961 roadster on the back cover of *MGA!* Jan-Feb, 1998. Perhaps Brent can offer some history?

Another must-have book with great photos is John Price Williams' *The MGA, First of a New Line*, Veloce Publishing Co., 1997. Even Price Williams gets confused, however, when he refers to a nice black and white photo of a hardtop as "a twin-cam coupe" (p 73), but he gets it right, on page 85, when describing UMO 96, one of the 1960 Sebring roadsters. He offers us pictures of Nancy Mitchel's MBL 867 (known as Mabel), Ladies Cup winner in 1957, and a pristine OBL 311, weighed down with trophies, which shows off the hardtop.

A recent acquisition, *MG The Untold Story*, David Knowles, Motorbooks International, 1997, has further important clues to the origins and history of the hardtop. Knowles comments that the coupe was added in September, 1956, and that today's generally well regarded looks were not so well received by Thornley, Enever, and O'Neil at the time.

The original Abingdon idea for a coupe had been handed to Eric Carter at Coventry, who had committed to the wooden patterns "working from the basic shape of the Alpine Rally hardtop" without formal authorization. The prototype (ULJ 426) had "a style of rear window that is similar to that of the optional detachable Vanden Plas hardtop." (p 71). Shortly before the coupe entered production, Thornley spoke to Vanden Plas about producing a cabriolet version of the MGA. This was never produced, but Vanden Plas was asked to manufacture "a removable aluminum hardtop (recorded as EX 196) in the Ex-Register, Feb. 1956), which would be available as a factory accessory until replaced by a cheaper fiberglass hardtop in 1959." The aluminum hardtop went on sale in October, 1956. Knowles quotes O'Neil as recalling that "the Service Department felt there was no way they could market the Vanden Plas top with the normal service loading. Another hardtop was examined, made by Universal Laminations." (p 72) The original version, being made of wood and fiberglass with a vinyl covering, would have been hard to get into production, but after Dennis Ferranti bought out the company, a "quality product in double-skinned fiberglass with steel reinforcements" became available (p 72). Knowles offers nice photos of both styles of hardtop in his book. ♦