MAKING GOOD ON THE MG MYSTIQUE

By Pete and Sue Murdoch, #78-432

Interior Upgrade British sports cars have unique characteristics which have long held the fancy of motoring enthusiasts in the United States. For example, styling is a major reason vehicles such as the TC series MG's, Austin-Healys and Jaguars are almost universally recognized as classics, and their current market value serves to dramatize their enduring popularity. Unlike post-war American sedans, the british sports cars brought with them a new excitement in driving. The low centers of gravity, a short turning radius, manual gear boxes and the open air thrill of a convertible all added to the appeal of these cars. It quickly became known to the driver and the passenger alike that these characteristics were accompanied by the car's questionable reliability, buck board ride and inadequate protection against the elements (read...leaky tops and poor heaters). The creature comforts in the interiors of these cars were an absolute minimum, and the inclusion of roll up windows in the early 1960's was considered almost a sacrilegious modification to the spartan vehicles. Modest leather seats and a walnut fascia were an integral part of the British sports car, and the rich fragrance they provided for the interior was as rewarding an experience for the occupants as the actual driving of the car itself.

The years have brought with them a dramatic change in the character of these cars. Government safety and emission regulations have brought about the demise of several marques, and cost pressures and changes in consumer tastes have dictated modifications in the few remaining British sports cars still marketed today. Perhaps the most dramatic example of such changes are found on 1975 or later model MGB's, whose plastic bumpers, raised suspensions and single carburetors attest to their federal certification. In anticipation of these modifications, in 1973, my wife and I purchased a new MGB/GT. Our new "B" had all the characteristics we had grown to expect that would make an MGB fun to own: style, handling, economy, a noisy gear box and the unmistakable MG mystique. While the lever action buck board ride still remained, customary shortcomings such as ignition problems and weather sealing were non-existent. The simplistic interiors of past MG's had given way to a comparatively plush set of bucket seats made with a combination of brushed nylon seat facings, carpeting and vinyl trim throughout. While such accommodations provided for unquestioned comfort and durability, they were the single element in our "B" that did not serve to reinforce the images we had of the traditional Abingdon sportster. Somehow, it never seemed quite right that plastic and vinyl should replace leather and walnut in the MGB and last fall we set plans in motion to make our MGB/GT complete.

A local tannery in our community (Grand Haven, Michigan) provides leather hides to upholster GM, Ford, and Chrysler products, and we were able to select and purchase quality hides from a wide variety of patterns and colors. We chose a black, bold grain hide that would complement the blaze red exterior of our "B". Unlike the standard navy blue interior, the black leather brought a new dimension of quality and class to the car. Prior to beginning the project, we agreed to retain a cloth seat facing on the seats because of their exceptional comfort in all climate conditions, and to replace all interior vinyl trim with leather. An attractive scotch plaid material was purchased through an automotive trim shop, and after receiving assurances of quality work, we hired them to upholster the front bucket seats and the rear jump seat using the plaid material and the leather we provided. With these components out of the car, we began to remove all the interior trim pieces. Items removed included the door panels, side kick panels, window pillar trim and all miscellaneous parts covered in the stock navy blue vinyl. The vinyl material was carefully removed

MAKING GOOD ON THE M.G. MISTIQUE (Continued)

from each panel (glue and staple held most in place), and each piece served as a pattern to cut a replacement piece of leather. Automotive trim glue and staples were used to mount the leather on the parts. Careful attention to detail often resulted in a finished interior component superior in fit to the original. Recognizing that we were well on our way to completing our "B's" interior in leather and cloth, we looked for a proper location to apply walnut trim. The upgraded interior required only an accent piece of walnut that would lend a touch of class to the project rather than giving it the wide-spread "wood" look that Detroit often employs. A natural for this accent treatment was the face of the plastic glove box door. A friend located in Denver, Colorado, that specializes in auto restoration, was sent the door and a beautiful piece of veneer was inserted on the front of the door.

As the project comes to an end and each detailed piece is carefully installed back into the vehicle, we are pleased with the finished product. The cost (approximately $300) and our efforts are repaid each time we enter the vehicle and we pause briefly to enjoy the charm of the interior appointments. No doubt some purists will argue that our "B" is no longer stock (we did retain all the pieces we removed), yet we have fulfilled our personal dream of owning an MGB that has all the physical and mechanical charisma that made MG the sports car America loved first.

- Pete and Sue Murdoch, #78-432

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WANT TO GET INVOLVED..."LET'S "B" HEARING FROM YA!"

I say! All you bloody MG owners and enthusiasts! Look here!

TECHNICAL NOTES

By Ken Smith, #79-845

The MGB has a typical front engine, rear wheel drive, layout. Although most cars with this configuration have gearboxes that will come out from underneath, on some with limited engine space the whole engine and gearbox have to lifted out. The Rover 2000 is like this. The Sprite and Midget can be worked on this way, or the engine can be taken out, followed by the gearbox as a separate unit.

The MGB unit is removed as follows:

1. Take of the bonnet.
2. Remove the radiator.
3. Disconnect all wires, cables, pipes, etc.
4. Remove carbs, starter (starter can only come forward slightly) and dynamo, etc.
5. Undo the exhaust from the manifold and pull away.
6. Remove gearbox oil.
7. Remove gear lever.
8. Take out the gear lever extension cover.
9. Disconnect speedo drive.
10. Remove the universal joint bolts from the front u/j and drop the propshaft.
11. Remove the rear block on the end of the engine tie-rod.
12. Undo the four bolts holding up the cross member.
13. Unbolt the gear box mountings, on each side of the cross member. Support the gearbox.
14. Take off the crossmember.
15. Fit up the hoist and place a sling under the engine, or use sling brackets.
16. Keeping the gearbox down as low as possible, lift out the unit.
17. Unbolt the gearbox.

Needless to say before attempting the above, disconnect the battery and familiarize yourself with what's where!

Useful Tips

a) Try and take the carbs off with the linkage intact! Remove them carefully, and pass them <u>over</u> the engine and lay them on the opposite wing, on a cloth. This saves messing around trying to re-assemble the linkage when replacing.

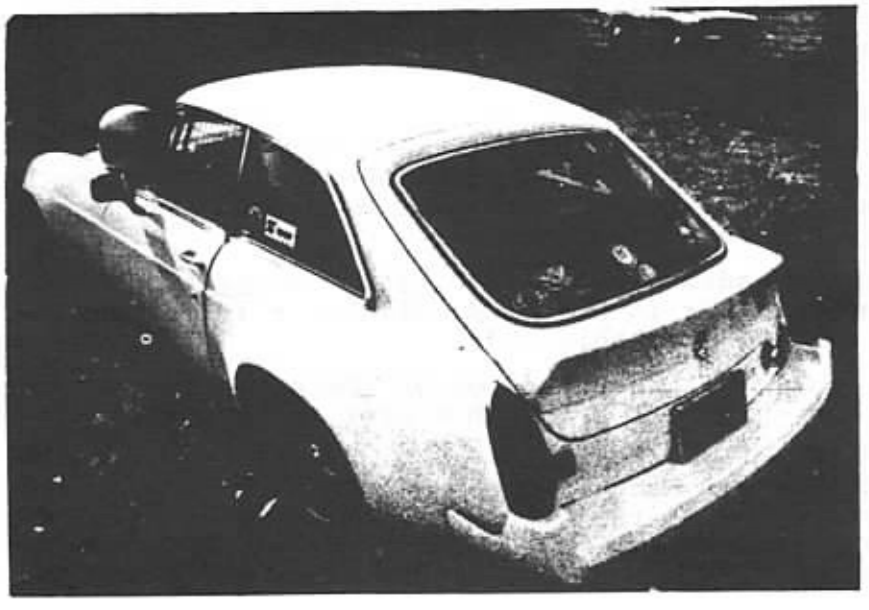
b) Take out the radiator, together with the <u>apron</u> (the black upright thing the radiator is fastened to!) There is not need to undo every bolt on the radiator this way!

c) Disconnect the oil cooler pipes at the <u>engine</u> end. Pull the pipes through the apron and drape them over the front wing. This saves removing the oil cooler.

d) In the States you have some double ended ratchet spanners. Whilst these are expensive they are very useful for getting at certain parts of the 'B' engine, i.e. the bolts down behind the engine mounting block covers, where a normal ring or open-ended spanner will not fit.

e) Put EVERY bolt and nut you take off into a polystyrene foam block. Just press them in this way you will not lose any, and you can mark them if you are unsure where they came from!

MGB GT V-8 CONVERSION,
BY GARY GRADY, #79-722



BUILDING YOUR OWN "V-8" By Gary Grady, #79-722

A while back, I had stated in the Quarterly that I was building my own MGB GT V-8. So as not to incur disbelief, I finished the car this past Summer, and am illustrating this article with photos, to let you see what I am talking about.

I have added a Mallory light triggered distributor, and the factory 3.01:1 rear gears. The car now has a speed of 155 m.p.h. at 5,000 r.p.m. In case anyone is interested in installing these gears in their GT, all you need is the ring and pinion set #BTB900 and a new carrier #BTB840. The spider gears from your old carrier will work. If you try to use your old carrier #BTB866, you'll find that it won't fit over the new pinion with new ring installed. Also, the 3.07:1 ring and pinion is better.

Also new are solid bushings, Huffaker anti-sway bars, and competition shock valves. At a recent race, I weighted the car, and with full load spare, and all my luggage, it tipped the scales at 2380 lbs. Not bad for four extra cylinders, and 285 b.h.p.

With manifolds reversed, the engine fits rather nicely. See the photos included in this article.

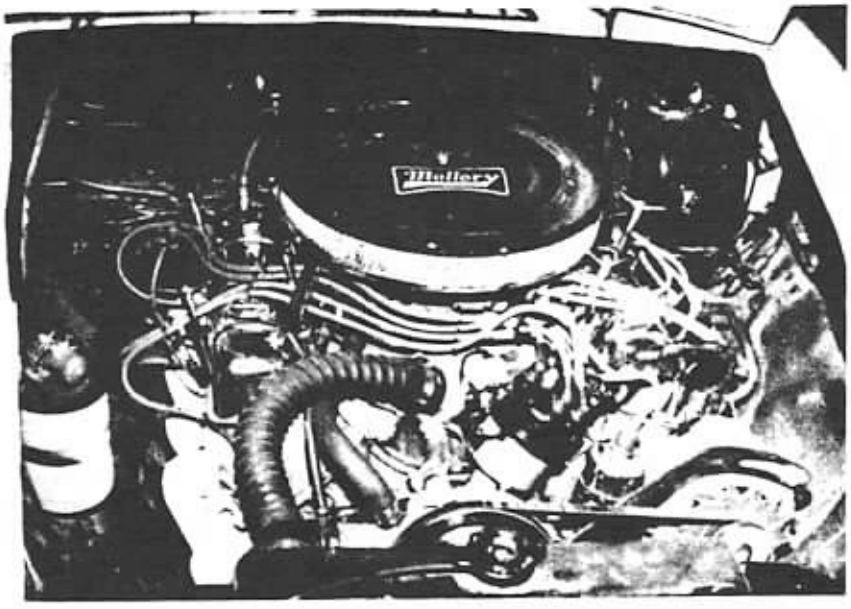
I did all the body and paint in my own garage. The flares are Huffaker's, and cost $160.00 for the set. The front and rear bumpers are fibreglass. I got them from some racers in Winter Haven, Florida. Together, they weigh only 7.5 lbs! The front air dam is hand formed out of aluminum and the rear spoiler is a factory item.

The paint is Ditzler Brilliant White, with four ounces of Blue Pearl in the four coats of Clear.

The interior is freshly carpeted and upholstered in Haughahyde, along with a 13" Racemark steering wheel, Stewart Warner 160 m.p.h. speedometer and 9 Grand tach, Simpson Safety Harness, Stereo Cassette, and Teabery Stalker Radar Detector. I also got tired of the EPA lump on the passenger side of the dash, and redid it in Naughahyde. I haven't upholstered the rear yet, as I ran out of carpet, when I shot the photos. Note how the larget than stock spare fits in the rear. Since I bought five mags, the spare doesn't look too bad.

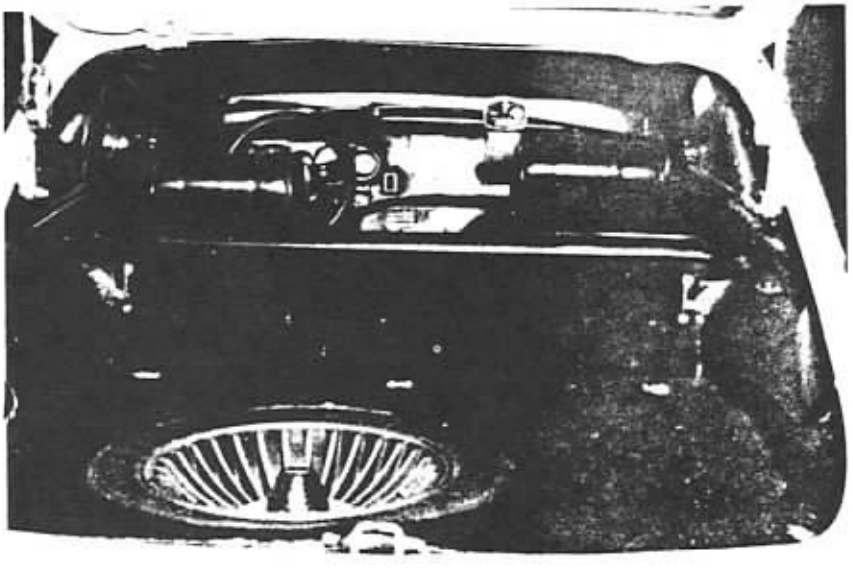
A pair of Vitaloni mirrors outside help emencely in traffic. One more thing about the body though! It was purchased from a wrecking yard for $250.00 and was so gutted it had to be loaded onto the trailer with a crane, due to lack of suspension.

Note the Simpson safety net and helmet. The car is fun to autocross!!! In closing, I just want to add that this is my fourth M.G. and my second V-8. Until you drive a properly set up version of the V-8, and leave a 911S sitting in your dust, you haven't lived. When you beat one of those "ego boys" in an M.G., they don't sneer so much at other M.G.'s. A little humility does them good.



THE EX-BUICK 3.5 LITRE V-8, FITS RATHER WELL

INTERIOR NOW FEATURES 160 M.P.H. SPEEDO AND NINE GRAND TACH!



OVERSIZED SPARE TIRE IN THE GT CARGO AREA

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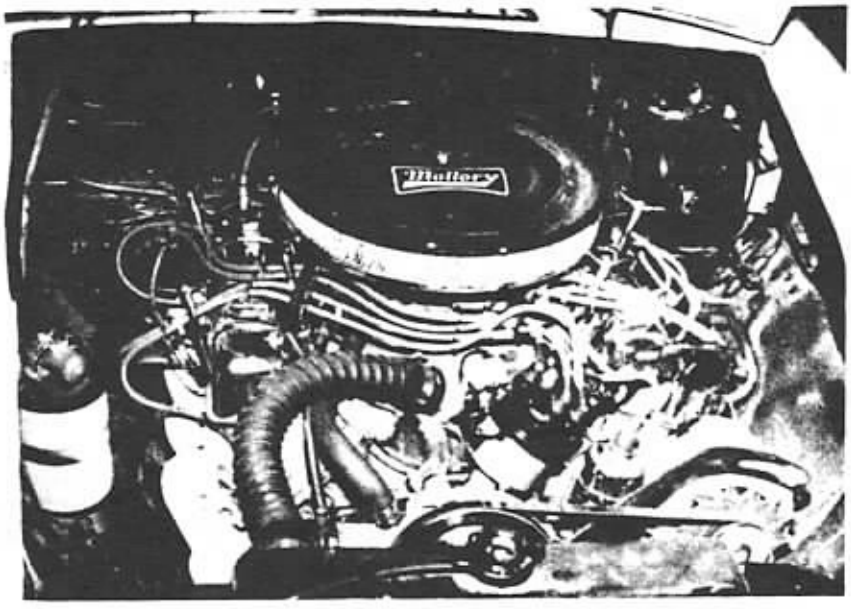

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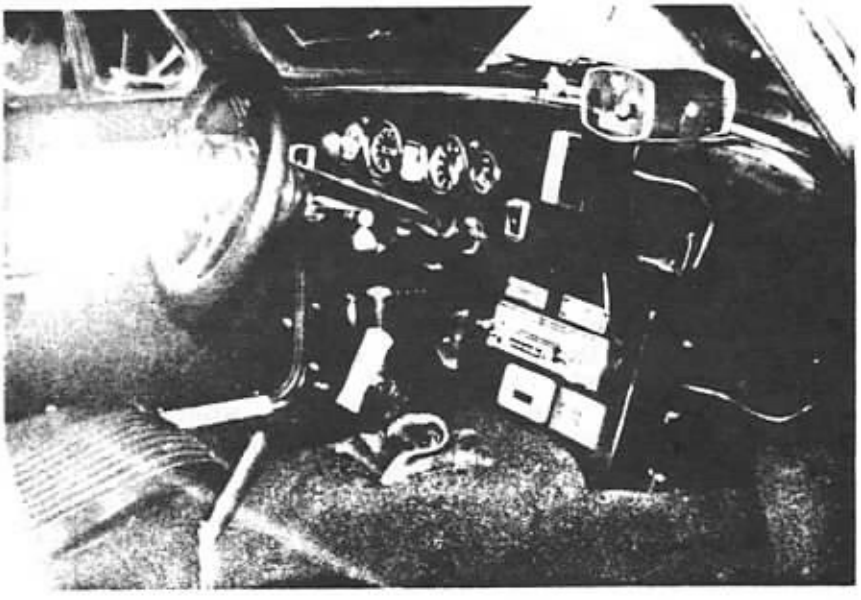
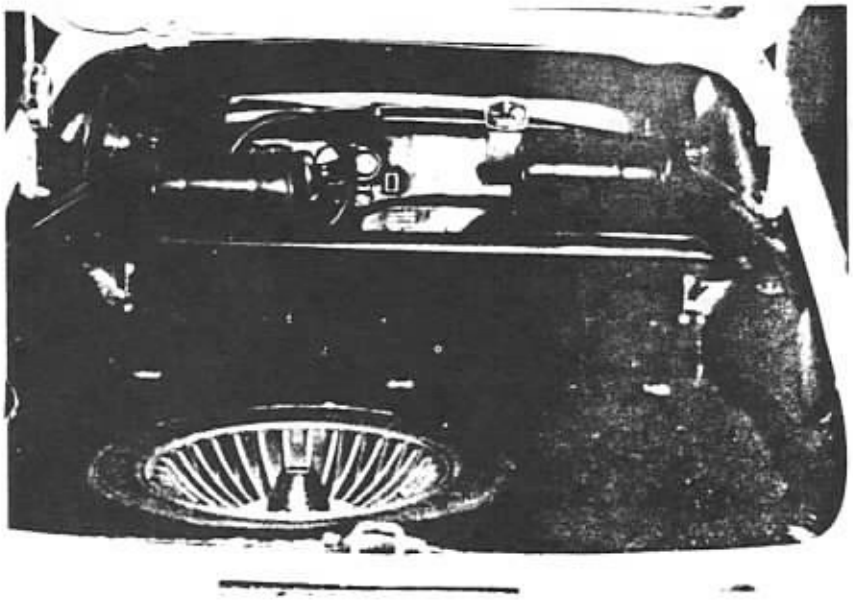




OVERSIZED SPARE TIRE IN THE GT CARGO AREA

MORE TECHNICAL TIPS By Ken Smith, #79-845

The annoying thing on the U.K. spec MGB is having to use the key each time you require to open the golvebox, because on a U. K. spec MGB you cannot close the box unless you lock it! So, I take the key off the key ring (or getting a spare will do), and find a plastic bottle top, into which the "thumb" end of the key can be fitted. Fill this bottle top with "Plastic padding," and set the key in it. Spray the top with an appropriate color to match the interior color scheme, and as an added refinement, stick an "M.G." octagon motif from another key ring onto the top of the cap. The glove box and ignition keys on the "B" are different, so there is no risk in having your car stolen, if you leave the key in the glovebox, when the car is unattended

If you ever get a loud "clonking" noise from the rear end of your "B" when you are accelerating hard, it could be due to several reasons. The "B" has a rather badly located back axle, that after a few years tends to flex, and move on its mountings, causing a "clink" underload. Or the universal joints in the prop shaft become worn, to display similar noises.

However, before panic sets in, have a look at the exhaust system! The "B" has an archaic system, involving a couple of pipes and silencers, all slung together rather awkwardly under the floor pan. Somehow, sometimes one of the pipes gets twisted, and was vibrating against, one of the strengthening members under the floor. So the simple solution is to undo the exhaust clamps, straighten the whole thing, and the "clonk" will vanish immediately. Make a regular check to ensure all exhaust bolts and clamps are tight, and not falling to bits, as this often causes, those difficult to detect "clonks" and knocks!

The MGB has always been renowned for a noisy top end, and the tappets tend to advertise the fact! However, sometimes all is not what they seem! We were listening to a friend's car the other day, and he said that he must get the tappets attended to, as they were very noisy. Sure enough, when we lifted the hood, it was rather a clamour, but when we put ears to the rocker box, it seemed the tappets weren't so bad after all, and the noise must be coming from somewhere else! Nine times out of ten, the fan is the cause of the racket, and on closer inspection, sure enough, the radiator top hose had twisted 'round, and the fan blades were just nicking it as they revolved. The hose wasn't cut, so a quick repositioning was all that was required to cure this noisy "B!"

Talking of fans and rads. I hope you never get a fan chewing into the rad! If you do, then the real cause of the damage could be the engine moving forward, on its rubber engine mountings. They may LOOK firm (even if you rock the engine)- but you imagine the combined weight of the engine and gearbox moving forward under really heavy braking, with nothing to slow them down except the actual rubber in the two front mountings! The only way this movement is checked, is by a gearbox stay, and very often it's not adjusted correctly, or its rubber bush and pads have disintegrated due to the presence of oil. By now all you "B" owners will have dashed outside, looked under your cars, and discovered that they haven't got a stay bar!

Well some of them have-and some of them haven't. I can't go into all the changes which have taken place, but I'm certain that the B GT had no such bar. Instead, it used what I would call "over-run" brackets, fitted to the front mounting, so that the engine would only move forward a bit, before it was restrained by these brackets. The gearbox cross member has a short vertical type mounting. The all-synchro type gearbox i.e. 1968 onwards, no longer had this early stay, but does have the "over run" brackets.

So check that all gearbox mountings and brackets are in good condition, and that they are adjusted correctly (if fitted), if not do you have over-run brackets on the engine mounts? And finally, check that the radiator is

spaced correctly (it won't hurt to add extra clearance!) By the way, if you have a steel fan, replace those little rubber bushes in the fan blade assembly. If the blade is a little loose, they cause noise and might even contribute to radiator damage eventually.

THE B BODY BEAUTIFUL or HOW I OVERCAME THE PARANOIA OF DOING MY OWN BODYWORK

By Terry Williams, # 78-676

I almost talked myself out of going to Ithaca this year. I'm glad I didn't but the reason why was rust and corrosion starting to peek through the body on my '69-1/2 B-GT. Along the seams on the fender tops, around the head and parking lamps, under the side trim and all over the rocker panels.

First I thought about replacing the front fenders. The prospects of shelling out close to five hundred bucks for steel replacements - plus the cost of installation, cancelled out that idea. I've never been one for fiberglass replacements, so that was out. I was left with two alternatives...take the car to a bodyshop and live in poverty, or tackle the job myself.

I figured that even if a I screwed things up badly, a good bodyman could reverse any major errors, so with confidence abounding, and the leaves falling from the trees, I pulled the car into my garage, put it up on four stands, and away I went.

The type of work I intended to do was basically small detail stuff, like the aforementioned seams, headlight area, etc. The plan was to do all the work up to the primer step, then take the car to a painter for finishing.

The initial step was to organize tools and materials. Along with my existing tools I needed:

1/4 or 3/8 inch hand drill
grinding disc attachment for same
half round body file
package of rubber squeegees
wooden paint paddles
a quart of plastic body fill and hardener
a sheet of fiberglass, resin and hardener
several cans of spray primer
a wire wheel attachment for the drill
LOTS of sanding discs (various grades fine to coarse)
LOTS of sheets of sandpaper (in various grades)
LOTS of patience and time

The wooden paint paddles are great for small sanding blacks when cut into six inch lengths. The fiberglass is used to cover over small holes in the body. There will be a number of miscellaneous items that will present themselves, but basically, that's the line-up.

Believe me, it almost made me cry to take the grinder to the body for the first time, but once underway, I became a man possessed. When grinding down, you must be sure to get right down to bare metal, as any rust left and covered over will defeat your own cause.

The seams on my GT take a gentle curve just ahead of the windshield, as opposed to the roadster, which has straight seams to the windshield. This curve was tricky to work around, but again, patience paid off. Having fully exposed the seam, and about three inches of the body to either side, it became apparent why the B is rust prone in this area. That seam is metal, and is spot welded to the underside of the fender, leaving the top part open. The paint covers it initially, but flexing of the body cracks the paint here, and moisture gets in and has a field day. There is no way to replace that seam, short of pulling

off the fender. On my car the bead was terribly corroded and pitted, but not rusted right through. Once the grinder had removed the lion's share of the paint and rust, the wire wheel is great for getting the rust out of the little pock marks and pits. I found myself spending a good deal of time on this operation to ensure that every last bit of corrosion was removed. If any is left and painted over, it'll rear its ugly head again in about six months and all you work will be for naught.

Once I was satisfied with the grinding process, the next step was to lay on the fiberglass, over the seam to seal it from above. Again, that curve in the seam was a bit of a hassle, especially since fiberglass doesn't like to conform to small shapes, so I cut the material to fit up against the seam on both sides, then laid a piece the width of the seam over the top, like a rough shape. Then, the body fill was SPARINGLY applied to build up the seam. This is where the time and patience come into play. It's a time consuming process of filling, sanding, priming and so on until the seam is built up to your satisfaction. (It's much like working on a full sized model car! Memories of my youth) The final step is to use glazing putty to fill in sanding marks and small holes in the plastic. Again this is a sand/fill/prime process and your favourite sedative is handy to have. Imagine a bodyshop spending a week working on one eight inch seam. The rear seam is the same ballgame, but much easier since it's a straight line.

A word of advice. Before starting, remove as much trim as possible. It makes for an easier time, and a neater finished product. On my GT, the brightwork around the drip moulding is secured with pop rivits which are easy to drill out and replace. Another tip is to cover as much of the car as possible with old newspapers or old bedsheets. This prevents getting overspray on the finish, and in the case of the interior, cuts down on dust to clean up.

Having faberglasted myself with the results of all this, I next took on the rocker panels. This turned out to be a real horror show. As I lay under the car grinding away, I sadly watched portions of the rusty underside fall away in great chunks. It became evident that the sill panel had to be replaced. This was a job for a real bodyshop, but in an effort to minimize costs, I prepared the area to the point where the bodyman stepped in and started cutting away the old panel. This meant grinding away the finish, and removing the better part of the interior, including the seats, interior panels, and carpeting. No small job, but you know the ounce of prevention story. I wasn't about to let some torch happy fool melt my door panels! I also found to my horror that the metal retaining clips inside the weatherstripping had long since rusted away, so removal of the stripping is a gingerly approached operation, unless you have a replacement stripping at hand. The final step is to remove the doors.

I expected the replacement panel to be the length of the distance between the front and rear seam under the door. Not so Batman. When I went to pick up the part from the dealer, it was about five feet long! It fits waaayyy inside the front fender, and waaayyy inside the rear dogleg.

Once the old panel was cut out, the mystery of the inner sills became apparent. There are two panels in there, as well as the outer sill (see the artist's rendering). One panel is the structural inners of the monoque design, then a much thinner inner panel, and then the sill. On my car that inner thin piece was totally gone, but the main structural

piece was in perfect shape (much to my relief). I considered not bothering to replace the inner panel, but it does give strength to the jack support, so I had it replaced with a very heavy gauge of sheet metal before the sill was installed.

The front fender must be pulled away to allow the forward portion of the sill (rear rocker panel) to be installed. This is accomplished by removing the four bolts on the underside of the fender. You'll find these to be quite corroded thank you very much, and a little heat is needed to remove them, Once the fender is pulled out, the sill panel inserted, it then becomes obvious that the rear dogleg is in the way. Since this was quite rusty on my car, the piece was cut out, which allowed the new panel to slide into place. Then a piece of body metal was welded in over top of the replacement. It sounds quite complicated, and it is, but the final results are worth the effort.

Before any of the pieces were welded together, they were heavily coated with undercoating to prevent re-rusting for the next hundred years or so, and small drainage holes were drilled into the underside to allow moisture to escape.

After the car was returned to me, the remaining areas were a comparative cake-walk. Removal of the headlight assembly revealed that the headlamp bucket was totally rusted out, and required replacement. While apart, all of the parts were buffed to bare metal with the wire wheel, primed and painted before re-assembly.

By far, the trickiest area was the fender top (about half-way along the fender). If you'll look up under your fender, you'll notice that there is a sort of ledge under there that traps moisture and grot that will eventually eat through the metal. After grinding the area down to bare metal, I found myself with about a dozen small pinholes. These were enlarged by using a cone-shaped stone attachment on the drill. Enlarging them removed the surrounding rust. I also got up underneath the fender and cleaned off the underside above and around that ledge. Fiberglass was laid over the entire area, sanded, then a THIN layer of body plastic laid over to smooth out the panel.

A tip. The best tool for determining if a panel is smooth, and free from dips and waves is the palm of your hand. Close your eyes and run your hand over the area several times and THINK STRAIGHT. You'll be amazed what your hand will tell you that your eyes won't.

The underside of the fender was heavily coated with undercoating, which you can buy at most auto supply houses, or take an empty paint can down to your local rustproofing place, and they'll sell you a pailful for about five bucks. I spread the coating on as thick as a brick with an old paint brush. Moisture doesn't stand a chance. The same application was done behind the headlights.

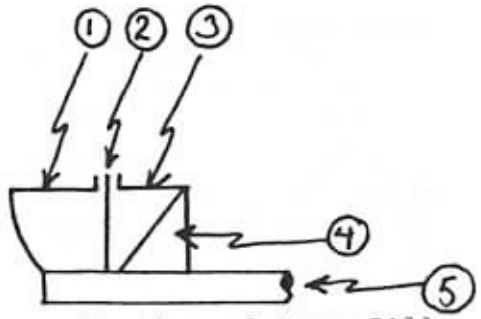
The undercoating beneath the fender, and the sheet of fiberglass over the fender will prevent corrosion for the next couple of decades or so. In effect what I've done is create a "sandwich" with the metal fender at the center.

To date, I have completed the entire left side of the car, and the results are most pleasing. As I've said, with respect to bodyshops, I know what's been done under that finish, and I'm confident that the job is well done.

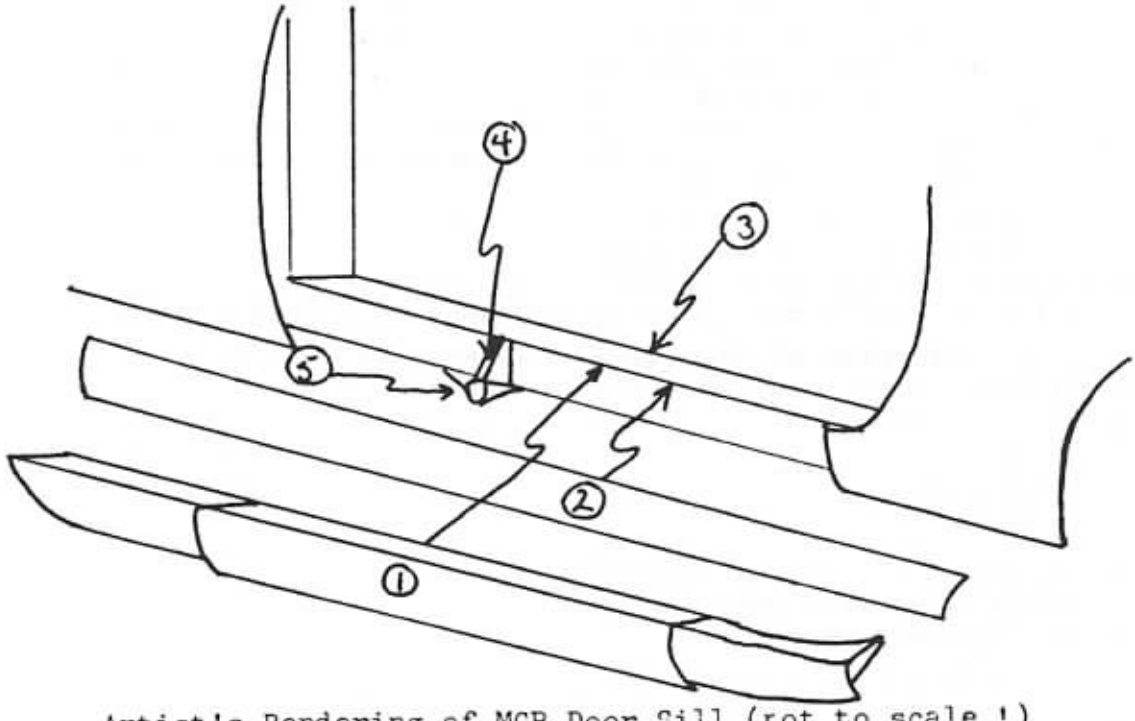
The car doesn't look so pretty right now, but once the other side is done, and the car repainted - I have a concours showdown with Dave Childress from Roanoke, West Virginia and his '68 GT next summer in Saratoga, N.Y.

The bottom line here is cost. My estimates show that aside from the sill installation at a shop ($175) my dollar outlay for the one side was about a hundred bucks. And that keeps peace in the family budget!

1 - Replacement rocker panel
2 - Inner support panel
3 - Body member
4 - Jack stand support bracket
5 - Jack stand



Cross Section of Door Sill



Artist's Rendering of MGB Door Sill (not to scale !)

CHECKING THE ACCURACY OF YOUR SPEEDOMETER

By John H. Twist, #78-415

There are several ways of determining the accuracy of your speedometer. In the manner described below, the speedometer is checked at a number of rpm ranges so that you can know what the error is (if there is one) at any speed. During the testing, you must have a passenger with paper and pencil who can keep his eyes on the speedometer while you keep yours on the tachometer and the ROAD. It is best to do these tests on a deserted road!

You must know the ratio of your differential. If you are not certain, physically determine it. You must know the radius of your rear tires--the distance from the ground to the center of the hub to within the nearest 1/8 inch. Be certain that the tires are inflated properly and equally.

Now for the road test! All tests are to be made in fourth gear (not overdrive). While you hold the speed constant at a given rpm, the passenger reads the speedometer and notes the speed on the chart you've made. For example:

ENGINE RPM	INDICATED MPH	COMPUTED MPH
1000	Passenger notes	
1500	speed in this	
2000	column	
2500		
3000		
3500		
4000		

The computed mph is then placed in the right hand column, and is figured from the following formula:

$$\text{Engine RPM} \times \frac{\text{wheel radius}}{\text{diff. ratio}} \times .00595 = \text{computed mph}$$

This test will show you whether a speedo error is constant, or whether the error grows the faster you go. Remember, the accuracy of this test is only as good as the accuracy of the tachometer.

POSTSCRIPT: The formula is derived from the following:

$$\frac{X \text{ (Eng rev)}}{\text{minute}} \times \frac{\text{axle rev}}{\text{(diff ratio)(eng rev)}} \times \frac{2 \text{ (wheel radius) (inches)}}{\text{axle rev}} \times \frac{1 \text{ foot}}{12 \text{ inches}} \times$$

$$\frac{1 \text{ mile}}{5280 \text{ feet}} \times \frac{60 \text{ minutes}}{1 \text{ hour}} = \text{computed mph}$$

DETERMINING THE ACCURACY OF YOUR TACHOMETER

By John H. Twist, #78-415

To determine the accuracy of your tachometer in this test procedure, you will need to cover a known distance and be able to clock it to the nearest second. The easiest and most available "known distances" are the mile markers on most expressways. Rather than trust the accuracy of this test to the distance between two of these stakes, a ten mile run would be best. It is best to carry a passenger with you who will be watching the second hand as you keep the rpms constant and your eyes ON THE ROAD.

TACHOMETER (continued)

It will also be necessary to measure the radius of your rear tires--the distance from the ground to the center of the hub within the nearest 1/8 inch. Be certain that the tires are inflated properly and equally.

You will need to know the differential ratio of your car. If you are not certain, check it physically.

After having driven the MG for a certain distance, say ten miles, and noting the time in seconds, use the formula below to determine at what rpm you were actually holding.

$$\frac{\text{diff ratio}}{\text{tire radius}} \times \frac{\text{miles covered}}{\text{seconds elapsed}} \times 605042 = \text{computed rpm}$$

This test will determine the error (if any) of the tachometer only at the rpm's at which it was tested. Several tests at several different rpm ranges might prove interesting.

INSTRUMENT FAULT DIAGNOSIS

By John H. Twist, #78-415

The electrically operated gauges on your MGB are known to fail on occasion. Sometimes just one fails, sometimes all fail! You can diagnose the fault and often repair the problem in your own garage. The only tools needed are 1) an automotive test light (ice pick on one end, a wire and alligator clip on the other end), 2) a piece of emery cloth or very fine sandpaper, 3) a pair of needle nose pliers.

The electrically operated gauges are: the fuel gauge, the tachometer, the water temperature gauge, and on models 1968-1972, the oil gauge.

Common faults are:

All gauges fail to work (turn signals will be inoperable too). Probable cause: The "green/white" fuse is faulty or not making contact. The "green/white" fuse is in the fusebox under the bonnet, and is the top fuse in two-fuse systems, or is the third fuse from the top in four-fuse systems. Test: Grounding the alligator clip on the test light, and with the ignition on, touch the "white" wire side of the fuse. The test light should light. Now touch the "green" wire side of the fuse. If the fuse is good, the test light will light. Solution: Replace a faulty fuse, and clean the copper clips which hold the fuse with the emery cloth. Squeeze the clips together before fitting the old or a new fuse. Note: If the fuse was faulty, another problem may exist, and the fuse may blow again.

Fuel gauge fails to work. Probable cause: Tank sending unit is faulty. Test: Remove the green/black wire from the petrol tank sending unit. Ground the test light, and push the pick into the female spade of the green/black wire. Switch on the ignition. The gauge should begin to climb to full, and the test light should begin a pulsating glow. Solution: The sending unit must be either repaired or replaced.

Temperature gauge fails to work. Probable cause: Sending unit just below the thermostat is faulty. Test: Remove the green/blue wire from the temp sending unit. Ground the test light, and push the pick into the female spade of the green/blue wire. Switch on the ignition. The gauge should begin to clumb to HOT, and the test light should begin a pulsating glow. Solution: The temp sending unit must be replaced.

If you cannot diagnose the problem, consult the wiring diagram in the owner's handbook or workshop manual, or contact a technical representative of the AMGBA.

QUESTIONS & ANSWERS

COMPILED AND ANSWERED BY: Michael Trigg, #78-672

Q: I own a pampered 1972 MGB (owned since new and never winter driven) and am considering removing the emission controls this summer. I've been told conflicting opinions on this and would like your advice. My mechanic (specializing only in British cars) suggests just cutting the bolts is all that is required, but he suggested only a 2% increase in performance would result and thus didn't really recommend removal. On the other hand, Lee Johnson in his article in the Summer 1979 Quarterly "Finding the Better Way," gave the impression that removal or bypassing as he termed it would increase longevity and reliability. Please donate your expert opinions on the subject and the process of removal that you would recommend.

- Bill Millman, #77-384

A: Having performed the above-mentioned surgery on a couple of dozen 'Bs,' I recommend the procedure as the performance increase is somewhat more than 2%, though how much I am not too sure. The way I go about this is to remove the air pump, and assorted hoses, the gulp valve and the intakes to the cylinders. The cylinder intakes are blocked off with 7/16 SAE bolts. The gulp valve is removed bracket and all, then replace the bolt to the manifold. The gulp valve manifold outlet, remove with a pair of vice grips, crimp in a vise and replace. Block off the sensor outlet with a rubber cap. The timing could be advanced slightly though this seems to vary from car to car. All of the above is of course subject to state, provincial and federal laws.

Q: I have a 1971 B roadster from which I have removed the anti-pollution compressor (way back in 1972 as soon as the warranty was over so I can't leave it on). My question is -- should I tune the engine any differently from normal 1971 specifications? I know it sounds strange to ask this question nine years after the fact, but because I only drive it in the summers, coupled with it being in storage for four years (while I was in the Army), it hasn't been driven many miles tuned to 1971 factory specs without the compressor. I have not noticed any change in performance, but I want to make sure that I'm not doing any slow damage to the engine. Thanks a lot for any answer you can give.

- John (Jay) VanSyckel, #78-568

A: No, no damage to your engine will result with the removal of that little horsepower eater, and it won't affect your tuning to any noticeable degree, though in a previous letter I did mention that the timing could be advanced a smidgen, though this varies from car to car.

Q: I presently have Michelin 165HR14 XAS tires on my '72 "B". What is the widest Michelin XAS tire that can be put on a 1972 MGB with factory suspension and wire wheels? I have been to the Michelin dealer in Pawtucket, Rhode Island, and their catalogue lists only one size tire for my 1972 MGB, which is a 155X14. I will be in need of tires within a few months and would like to go wider with Michelin (only) tires.

- Thomas A. Stanko, #79-754

A: To the best of my tire knowledge, the only Michelin that you can install on your 'B' larger than the 155x14 you have at present is the 165x14. I have heard of 185's being used, but then you run into clearance problems with your fenders. If you want a lower profile tire with a wider 'foot,' then you would have to get away from Michelins into something like a 60 series low profile Pirreli.

Q: What fuse do you replace the factory fuse with? The factory one says: "17 Amps continuous Lucas 35 A." Mechanics I've asked guess 20 Amp or 25 Amp, but don't really seem to know.

- Gary Gillies, #77-362

A: A 17 amp/35 amp continuous is fine for the job. If this fuse 'blows,' then you have a problem somewhere.

Q: "EXCUUUUUUSE ME," what do you mean they don't make a positive ground (am-fm) and/or (cassette) in-dash unit for early MGBs? I can't find anybody that makes them unless you know something I don't! Can you help me? I am going nuts listening to AM radio stations because they play the same song over and over and over again, until these AM stations want to make you "puke." Any information is appreciated for my 1966 MGB!

- Serge Bilcheck, #79-783

A: I have never heard of a positive ground AM/FM Cassette though I have heard of some Japanese units with a ground switch. Best way in my experience is to install the negative ground unit, then repolarize the generator, this being done by disconnecting the field wire to the voltage regulator and touching the wire to the 'B' or battery terminal on the said regulator. Contrary to popular belief, this does not cause your fuel gauge to read upside down or your turn signals to flash backwards. The only thing you have to change is your tach if the original is a positive ground unit.

Q: I understand that there is a gearbox on the back of the B speedometer. Mine has decided to serenade me at all times with a 'buzzing' sort of noise. I had this replaced years ago on a roadster I owned, but I'm not too sure of the process involved, and all of my service manuals are sketchy on details to say the least. What's involved?

- Terry Williams, #78-676

A: To replace your speedo gearbox is a chore indeed. Having done this job numerous times, I have learnt to dislike it intently. Best way is to remove the underdash cover, wiggle an arm up on the right hand side by the heater control and undo the round knurled nut, one of two securing the speedo head. For the other side, wiggle your arm up from the left hand side of the steering column. All this has to be done by feel. Once these two nuts are off, along with the little legs, pull out the head, disconnect the cable, remove the light sockets and then change the gearbox. Reverse the procedure to install.

Q: In regards to the question from Hugh Curtler concerning fuel in the Spring '80 quarterly, I may have been laboring under false information for the past twelve years. My first MG was a 1968 Midget and when I bought the car I was informed that to prevent fouling in the S.U. carbs the best gas to use was AMOCO Premium or Gold (AMOCO always advertised their gas as lead-free) I am now on my fourth MG (a 1974½ B) and have had no complaints with the AMOCO Gold (octane rating of 93). Any comments would be appreciated.

- John Weir, #77-353

A: To the best of my knowledge, John, lead-free gas was unknown back in 1968. Mind you, I could stand corrected here. The AMOCO (unknown brand in Western Canada) might have been lead-reduced, but never lead-free as the lead is used to 'lubricate' the valves, unnecessary on today's cars that are produced with specially hardened valves. I have never heard of lead in gasoline fouling carbs.

ATTENTION MEMBERS! PLEASE SEND YOUR QUESTIONS IN ON TIME! REMEMBER, DEADLINE FOR ALL TECHNICAL QUESTIONS, UPKEEP AND PERFORMANCE HINTS, OR TECH ARTICLES IS 1 JULY 1980 FOR OUR FALL 1980 QUARTERLY. WE NOW HAVE A NEW TECHNICAL CHAIRMAN JOHN TWIST, #78-415, ALL TECH MATERIAL SHOULD NOW GO TO JOHN!

PLEASE WRITE TO:

TECHNICAL CHAIRMAN
John Twist, #78-415
614 Eastern Avenue SE
Grand Rapids, MI 49503
(616) 245-2141

UPKEEP AND PERFORMANCE HINTS

COMPILED BY: Michael Trigg, #78-672

To Hugh Curtler - In order to solve your problem of not finding any high octane fuel for your MGB, there's no need to modify your engine. Just begin using octane boosting fluids on a regular basis. Moroso makes a good liquid for this purpose. Typical octane boosters will raise the octaine rating by 7 points if one quart of the stuff is added to 20 gallons of gasoline. For example, it has the potential to raise the octane of 89 point gasoline to 96 point, which should be high enough for all MG cars. You need to pour some in every time you fill up your gas tank, but that's no real problem, as octane booster is easily available and only about 10 dollars per quart. By the way, if you can't find it anywhere else, Paeco has some in stock.

To Michael J. DiLeo - Anytime you see a U.S. specification black-bumper MGB-GT, you're looking at a rare car. GT's with black bumpers were sent to the United States for only one model year, and that was 1974-1/2. (Your car, as a September or later 1974 vehicle, qualifies as a 1974-1/2.)

To Peter Cosmides - To really improve the handling of your 1975 MGB, replace the front anti-sway bar with a 7/8" Addco bar, and install an Addco 3/4" bar on the rear suspension. Also, simply using wider tires won't do much unless you buy wider rims. The skinny 4.5" rims of the MGB will tend to curve the tire tread, which is what you don't want. To get full potential out of your wider tires, purchase a set of rims about 5.5" wide. You'll notice an improvement.

A Battery in your Trunk. - Bill and Cathy Prinskett left out some important steps involved in trunk-mounting your battery. Make sure you devise some method in which to allow gases to escape. If you don't, one good spark could send your trunk up in flames. Also, check and double-check to insure that your battery is mounted and strapped-down well enough so that it won't move around or fall over. As a final safety check, make sure there is nothing in your trunk that could damage the battery casing in any way during hard driving. In other words, make sure that something like the jack can't slide over and bust up the battery.

About the Spring Queen "B" - Mike Hennesy, the owner of the beautiful 1974-1/2 roadster, featured as the spring Queen "B", stated that his car has a 1974 suspension with a 1975 body. But after comparing the photographs of his car with photographs of earlier and later B's, I've come to the conclusion that his car has the jacked-up suspension. I hope someone else will check into the matter in order to confirm my findings. All the same, it's a very nice car, and I'd be proud to own it.

- Tim Flowers, #79-885

In the tech tips of the Spring '80 issue you left out one klunk in the rear end that I have seen many times. The wire sheel knock-offs were not properly tightened. I had a wire sheel shop tell me one time that one cannot tighten the knock-off too tightly. So don't be dainty. If tightening the knock-offs cures your klunk, you should remove the wheel and inspect the splines on both the hub and wheel for excessive wear, very sharp edges on the splines. Don't forget to regrease them on reassembly.

MGB front wheel bearings can be replaced more easily if one discards the cuplike bearing spacer and the small shims. The gearing retaining nut must then be pulled down snugly, backed off, and then given a couple of ft. lbs. of preload. This eliminates a lot of extra time in trying to get the proper end play by adding or eliminating the adjusting shims, and then torqueing to 40-70 ft. lbs. I have heard that when BMC first designed this set-up, the bearings they used were not of a tapered bearing design and the bearing spacer and torque were needed to keep the bearing rollers and cage intact. Tapered roller bearings are designed to be installed like I have described and Leyland has stayed with their system even though they, too, have gone to a tapered bearing.

I use Anti Seize instead of grease to lube the hubs. It doesn't harden like grease and lasts a lot longer.

- Steve Canaday, #80-1078

As a new member and only having received one Quarterly, I have no way of knowing if the following information on Upkeep and Performance Hints has already been covered. I'll leave that to you. So, here goes.

I am in the process of completely rebuilding my '71 B and also converting to a higher lift cam, heavy valve springs, aluminum push rods and a Weber 45 DCOE 9 carb.

Hints on Weber Conversion:

1. The Weber is not designed to work with emission controls so disconnecting the air pump and plugging the four inlet holes on the head is necessary. I had done this a few years ago and with the exception of finding the right size plugs it is no problem. Simply take the air inlet manifold to your local parts store for a match up.

Before I go on it should be explained that the instructions with the Weber Conversion Kit do not mention any of the above or what follows. Fact is, the instructions amount to a rough sketch showing the carb and manifold.

2. Throttle return linkage is not supplied except for a very light spring which doesn't fit anywhere. An eye bolt of about 1/4" stock mounted through the fender well in direct alignment with the cable inlet hole on the manifold and the cable attachment linkage using a medium tension return spring works great.

3. Engine breathing can be accomplished using the original absorption canister if you do the following:

a. Plug the port on the canister that would normally lead to the carbs. A metal screw of the right size works fine.

b. Very Important. Remove valve cover, knock out the plug in the inlet pipe on the valve cover. Use a slender screwdriver and gently tap all the way out.

c. Route 1/2" hose from pipe on side cover to air cleaner. Note: If your air cleaner doesn't have an external air inlet (mine didn't), here's a little trick. Cut the pipe on the side cover first just before, and then just after, the 90° end. Drill a 1/2" hole in the center of the air cleaner cover plate just above the fastener.

Use a die or thread chaser and thread the #1 piece from the cut for about 1/2" to 3/4". Mount this piece on the air cleaner using a nut inside and out. Insert piece #2 into the hose at the air cleaner for a clean 90° bend. There is still enough pipe left on the side cover to attach the other end of the hose.

4. Vacuum advance is not to be used with a Weber. Instead, you are to have the dist. recurved. As a temporary measure I did run a vac. line from the port on the manifold and found no problems at all. I won't go so far as to say this will not hinder performance in some way, but my car idles and runs smoothly through the entire RPM range.

A New Subject.

Vertical play in the steering wheel can sometimes be corrected with a hammer and prick punch.

With my steering wheel moving noticeably when lifted from the bottom, I checked with my local MG dealer about a new bearing. I was told the bearing assembly is only sold as part of a complete steering shaft at a cost of roughly $300. After removing the steering wheel I found the bearing is mounted in a pot metal housing. The bearing itself was okay, but the housing had spread allowing the outer bearing race free movement. A few not-so-light taps with hammer and punch around the outer edge of the housing did the trick. It took 130,000 miles to loosen the first time, and I think the repair should last at least half as long.

I'll close for now, but should have a complete report on performance improvement with the Weber Conversion in the future.

My plans also include front and rear stabilizers, air conditioning, fiberglass hardtop, new paint, wheels, interior, etc. I'll keep you posted.

- Jim Sauers, #79-969

Maintenance Tips from the Backwoods Britain garage

Transmission Oil: Checking the transmission oil level is a job requiring strong fingers and small hands, the access hole being a monkey trap behind the center console. Should oil be needed, a length (about 20") of flexible tubing and a funnel will make the job much easier. Clear 3/8" tubing works well and allows you to visually check the oil leaving the tubing. Lead the tubing into the dipstick hole and pour in about half of your estimated need and recheck the oil level. A few rags and a tight fit of funnel to tubing will protect the carpet.

Turn Signal Flasher: A number of members have asked for the location of the flasher unit. On mid-series cars (Mk II models) it is located behind the fiber panel under the dash on the passenger side (along with the radio speaker). The flasher is an aluminum cylinder about 1" in diameter and 2" long. Many British cars use the same 3 prong flasher unit, a few have a 2 prong unit with lock screws.

Wire Wheel Splines: On MGs with wire wheels, dirty black spokes are a common sight. This problem is caused by grease from the hub splines (the little grooves on the wheel hub and stub axle are splines) running down the spokes with a bit of help from brake heat and centrifugal force. I do not know of a total cure but if your axle seals are good, the following items will give excellent results: Thoroughly clean with paint thinner the inside of the wheel hub. With all traces of oil removed, seal the spoke ends inside the hub with silicone glue and seal. The splines must of course be greased if you have any hopes of ever removing the wheel but leakage will be much less noticeable if Permatex anti-sieze is used as the spline lubricant. It is available in a silver color that does not contrast on the spokes.

Twin Carb Engines: It is very wise to carry a spare carb return spring or two in your in-car-kit. These springs (normally 3, each a small 1/2" coil with a hook or loop in each end) serve to close the carbs. A broken spring is easily replaced but does result in a partially jammed open throttle until replaced.

Next Issue: Tow Bar design for MGBs and more member questions.

- Dave Childress, #79-894

To get the late B's to pre-75 ride height is a matter of changing springs front and rear, and the front cross-member. We haven't seen a late crossmember, but have been told that the mounting points are 1 to 1-1/2 inches higher than pre-75 cars. The front springs are longer and they have added two leafs to the rear springs.

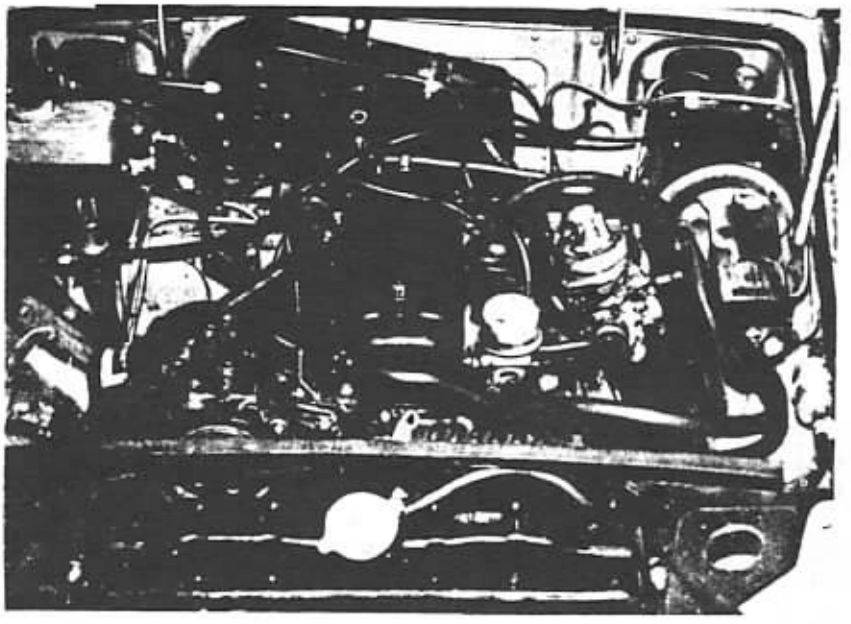
- Mitch Wright, Parts Dept.
Huffaker Engineering

(sent in by Pete Cosmides, #76-069)

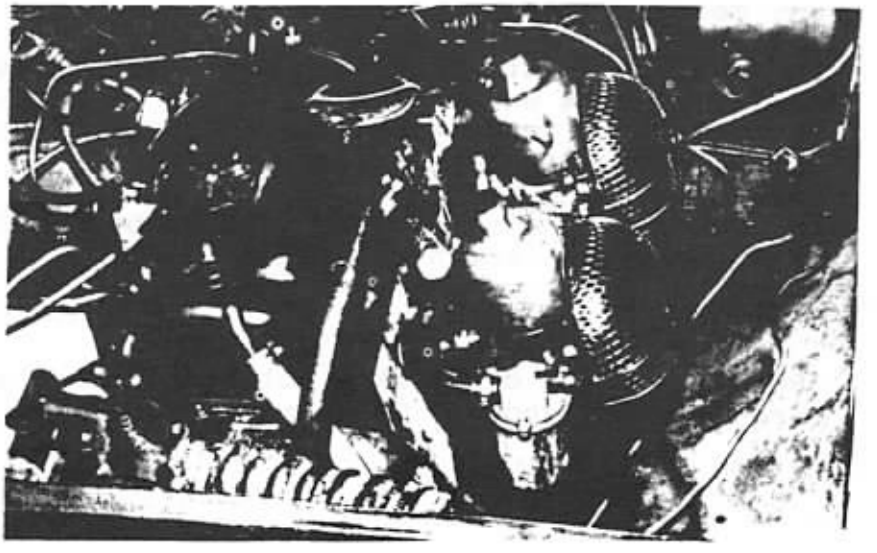
Since myself and a few other members have sent in articles and notes on late model carb conversions, I thought it should be proper to send in a couple of photos showing the before and after.

I guess that everybody has their favorite way to fill or top-up rear ends and trannys. Here's mine: The Black & Decker Jack Rabbit Pump. This little gem eliminates oil running down your arms. Two four foot hoses come with the pump, as well as a spraying attachment, and a weighted filter. Yessireebob, it is a hell of a lot nicer to be able to sit under your favorite shade tree, with one hose in the rear end or tranny, one end of the hose in the replacement oil, and your own rear end sitting under the tree merrily cranking away on the pump!

- Jim Ireland #77-327



JIM IRELAND, #77-327 STARTED OUT WITH THE SINGLE ZENITH-STROMBERG CARBURETOR FOUND ON 1975 AND LATER MGB'S.



NOW THOUGH, JIM'S MGB HAS BEEN CONVERTED TO THE TWIN SU CARBURETOR SET UP, AS FOUND ON 1974 AND EARLIER MGB'S.

I have had a few problems with my 70 B Roadster starting up in damp, rainy, weather. The best solution is to unsolder the existing wires in the distributor and replace with a wire, with a plastic type coating like on conventional ignition systems. This method has worked for me. I hope it does for you.

- Denise M. Fournier, #80-1009

In the last issue, Mr. William Ralston asked about the height increase in the later MGB's, what caused it, and how to get around it. From 1975 onwards, the mounting points on the front crossmember were modified to accommodate the new heights laws imposed by the powers that be. There is really only one practical way to lower a later car. Obtain a pair of performance springs for the front (Huffaker has good ones.) These will lower the front of the car by about 2 inches. The leaf springs in the rear can be de-arced at a good spring shop, as the mounting points on these were also changed. If you try to put an earlier crossmember on a later MGB, you'll find that the steering shaft will have to be shortened. This is because the end of the steering shaft would now be closer to the steering gear without the molded in mounting point changes.

- Jim Ireland, #77-327

In reference to Jeffrey Allison's problem of filling the gearbox with oil without spilling the oil all over the side of the car, I have suffered the same headache.

To eliminate this problem I attached a 24 inch long piece of rubber hose having an outside diameter of around 1/2 inch (fuel line or vacuum hose will do) onto the end of a funnel. Placing the hose in the hole you can fill the gearbox without any mess.

Before I put everything back together again, I smear the indicator neck and o-rings with oil or grease which prevents the indicator from "freezing up" or sticking in the hole the next time I service the gearbox.

If anyone else has had this problem, you know what a knuckle-breaking chore it can be!

- Ben Munday, #79-698

(Removing stuck dipstick. Solution! Bend a piece of coat hanger wire to shape shown. Makes it a snap.)

- Technical Editor

UPKEEP AND PERFORMANCE HINTS (Continued)

I've written down some of the things I've learned in six summers with my bought-new '74 convertible. You can use whatever you want.

Specific

- Check the rear brakes more often than the book says. Recently I checked mine 1,000 miles before scheduled only because the jack was on the car anyways. They needed adjustment.

- When the dashboard under panels kept falling loose, I wired each side up by drilling a hole, and running a wire up to the lower dash on one side and a small bracket on the other.

- Recently, the windshield was replaced. The shop told me they didn't need the six hours allowed them by the insurance company. They told me they did not have to take the dashboard all apart like the shop manual says.

- After taking delivery of my "B", I drove it for several months before discovering a third ignition key attached to the right side of the engine compartment. No one told me about it! For those months, anyone could have popped the hood and driven off!

- After the original undercoating was "stoned off" the wheel wells, I replaced it with a paint-on undercoating that seems to be okay.

General

- For repairs or other work, find a shop that has experience with British (sports) cars.

- Ask around for advice about a shop's reputation. Ask owners of sports cars as well as professionals (e.g., ask your mechanic for a body shop).

- Get a shop manual reprint and carry it in the trunk in a plastic bag.

- Use a proper car cover.

- Do all prescribed maintenance (Abingdon isn't kidding).

- Hand wash the car in the shade using a car soap and a nozzle-less hose.

- Use glass cleaner on all glass, and Armour-all on the top, dash, vinyl seats and tires.

- Carry some tools and things like tape and wire in the car. Sometimes you can get going again yourself if you break down.

- I tried some "anti-corrosion washers." These are fibre washers impregnated with tar or oil or something. They fit over the battery terminals like a collar and are supposed to stop terminals corroding. All they did was disintegrate and make a horrible mess on the terminals. I'm back to petroleum jelly.

That's about it for this letter.

I've recently had various troubles with my carburetor float bowls and wound up with gas being pumped on the ground. Even with the car running. I've had two separate causes for this and found two solutions, so I thought I would write a little note for the next Quarterly. Since you are the new Technical Chairman, I'll follow directions of the recent newsletter and go through you.

For those who have noticed a drastic drop in gas mileage or large stains on the ground and the smell of gas, a likely reason is that your float bowl needle and seat is not closing completely. This can be caused by debris in the needle and seat itself, or by wearing of the float mounting pin. To check for this, turn on the ignition without starting the engine. If gas is pumped out of the overflow pipes the float valve is not closing.

First the float chamber lid must be removed. The float, and the needle and seat valve is attached to the lid. If debris has gotten in the valve it can be removed with air or a wire. It is possible that the needle has been damaged and should be replaced, but the old needle should be adequate until a new one is obtained.

The second problem is most likely to occur on cars with many miles. This is, that the pin, which holds the float, and the holes in the float, are worn to the point where there is enough free play to allow the float to contact the float bowl lid before the valve is fully closed. On older models, a metal tab attaches the float to the pin and by adjusting the tab according to manual specs the problem can be cured. On later cars with solid plastic floats and no allowance for adjustment, three methods can be used.

First, the pins can be turned (they will stay as you put them) so that an unworn portion is toward the bottom of the float bowl.

Second, an aluminum pop rivet of slightly larger diameter can be cut and used to replace the worn pin. This option requires drilling of the holes on the float bowl lid and the float itself. The drill bit should be of the same diameter as the pin and the float should move freely. A third option is to obtain a thin washer to place between the needle and seat valve and the float bowl lid. Place the washer on the bottom of the valve assembly before refitting and it should allow the valve to be fully closed before the float can strike the lid.

Of course, all of this only applies if you own an older model B which still has separate float chambers.

Mike, I hope that the article isn't too long. Also, I hope it helps some people. I thought I would have to buy new float bowl assemblies until I did the pop rivet bit. It's worked fine since.

- Don Holmes, #76-164

BONNET INSULATION

The underside of the bonnet on the MGB is covered with an insulation which reduces engine noise and reduces the "hollow" noise that large unsupported sections of metal tend to make. Unfortunately, this insulation begins to tear away over a period of time, eventually covering the engine or radiator when the bonnet is closed. Often it is found removed altogether. The insulation can be replaced and refitted easily with a minimum of time and expense.

Firstly, the bonnet must be removed from the car, and laid upside down on a protected surface to prevent scratching. The convertible top or GT top, covered with a blanket, is wonderfully satisfactory. Then, over the existing insulation, or new insulation (available from most auto interior shops), wire fencing is fit. The wire fencing is available from most any hardware and is of the "welded-wire" rectangular mesh variety. Five feet of this will be plenty. Cut the wire to fit the individual sections of the under-bonnet area, leaving two inches of each individual wire to fit under the bonnet lip. The bonnet will now have a much more "solid" sound when closing, and some engine noise will be reduced.

- John Twist, #78-415

FROZEN TIGHT

If you find yourself literally frozen in place (the ice has secured your tires to terra firma), and you have wire wheels with knockoffs, this may be a tip for you.

Jim Blett of Swedish Car Service of Grand Rapids gave me this tip today after trying every other means available to free his 1962 AH 3000 from an icy grip. A loop of chain is placed around the knockoff, with a heavy rag under the knockoff to protect its finish. A bumper jack (of American variety in this case) was supported on a piece of wood, the chain placed in the cradle of the jack, and the wheel jacked off the ground. Obviously, one must be VERY CAREFUL not to strain a frozen wheel so severely that the chain gives way or the jack slips! This may seem a crude method, but it is certainly better than trying to melt the ice with your propane torch and burning a tire instead.

John Twist, #78-415

ATTENTION MEMBERS! PLEASE SEND YOUR UPKEEP AND PERFORMANCE HINTS IN ON TIME. DEADLINE FOR THE FALL 1980 QUARTERLY TECHNICAL ARTICLES IS 1 JULY 1980. PLEASE SEND ALL UPKEEP AND PERFORMANCE HINTS AND TECHNICAL ARTICLES TO OUR NEW TECHNICAL CHAIRMAN, JOHN TWIST, #78-415.

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TECHNICAL CHAIRMAN
John Twist, #78-415
514 Eastern Avenue SE
Grand Rapids, MI 49503
(616) 245-2141

THE EMBARRASSING MGB STALL

By John H. Twist, #78-415
AMGBA Technical Chairman

It isn't often that one finds the owner of a newer MGB (newer as in single carburetor and electronic ignition, generally 1975 and newer), who hasn't had an embarrassing stall in the middle of the busiest intersection in town. Sometimes, after gently persuading, vulgar chastizing, or a proper touch under the bonnet, the car will cruise away as though nothing had happened. Sometimes it won't restart and the tow truck is inevitable. These are some tips on determining which of three reasons your MGB may stall.

ELECTRONIC IGNITION: This pointless system either works or doesn't work. It has no in-between as do the distributors on earlier models. It can, however, work for months, not work for five minutes, then work excellently again for several more weeks or months. If it should fail while driving at a normal speed, the engine will die exactly as if the key had been turned off. The tachometer, although the engine is still turning, will fall immediately to zero. An underbonnet check is easily done. Remove the high tension ignition wire from the center of the distributor cap and hold it NOT FURTHER than 1/2 inch away from the base of the coil, or to the coil body. Have someone turn the engine over. If there is a spark, the electronic ignition is working. WARNING: Holding the ignition lead too far away from a ground source can cause the spark to back up through the coil, travel to the distributor, and destroy it! Should there be no one to assist you in turning the ignition key to "start," you can start the engine from under the bonnet. To start the engine, ENSURE that the gearbox is in neutral and that the handbrake is on. Switch the ignition key to "on." Remove the white wire with the brown tracer from the small cylindrical relay just above and to the rear of the ignition coil. Touch this lead to the exposed clips holding the bottom fuse in place. This actuates the starter. WATCH OUT for your hands and fingers! If you are not certain whether your MGB is fitted with electronic ignition, examine the wiring coming from the base of the distributor to the wiring loom. If there is a single wire connected to a single spade terminal at the front of the distributor, the distributor is the earlier type with points. If there are three wires exiting from the distributor to a joining plug, the distributor has electronic ignition. If the distributor is NOT producing a spark, and all the wires on the coil and distributor seem tight, call that tow truck!

FUEL PUMP: Fuel starvation differs from ignition failure in the way the engine dies. Instead of killing intantly, the engine will starve for fuel, the carburetor may spit (similar to accelerating hard when the engine is cold), or it may seem that the brakes are dragging. In any case, you find yourself next to the road. IF you have a pair of pliers handy, you can remove the fuel line from the carburetor. The fuel line is approximately 3/8 inches in diameter, enters the carburetor from the front close to the air cleaner assembly, and may have a piece of exposed pipe in the line about 2 inches from the carb. Remove the fuel line CAREFULLY. If the pump has not failed, the pressure in the line (several pounds) can cause quite a spray of raw gasoline! Placing the fuel line into an appropriate container (can bottle, etc.), switch on the ignition and see if fuel flows from the line. If it flows, but

very slowly, the filter may be plugged. If it doesn't flow at all, the fuel pump may be the culprit. Reconnecting the line to the carb, again switch on the ignition, and with your fist, give the fuel pump a good smack. The pump is located at the right front of the boot (trunk) and is covered with a black metal rectangular housing. If, after smacking the pump, you hear the pump ticking, then the points in the pump probably need replacement. BUT, the ticking means that the pump is pumping (if it doesn't stop ticking, either the pump is faulty or YOU ARE OUT OF GAS!). If the pump does again begin to work, drive immediately to someone who knows the pumps, and see if they can determine the problem. If it won't tick, and won't pump gas, call that tow truck!

CARBURETOR MIXTURE: The most common cause of stalling is the carb mixture. The engine simply floods out. This can happen after idling a short time or when you're tied up in slow traffic. It need not happen if the rpms are kept high enough; it shouldn't happen at all, of course. It may also happen after running the engine from a COLD start for a few minutes, shutting the engine off, then finding it impossible to restart. Waiting a little while is a solution to this problem. The excess fuel vapors disperse and the car can be started easily. If that fails, remove the air filter, and try again. If that attempt fails also, then unscrew the white top to the carb, angle it sideways and pull up. This can pull the carb piston away from the jet and allow fresh air, without more fuel, to be inhaled by the engine. If need be, remove the air cleaner assembly (watch out for those throttle return springs!) and lift the piston by hand. Once the car restarts, make a point of having the mixture LEANED as soon as possible. Back to starting, it is necessary to have another person turn the key to "start" or follow the underbonnet starting instructions while either pulling up on the white damper or lifting the carb piston.

Those are the three most common reasons for a stall. If the car stalls on you, try to remember how it stalled so you can assist your dealer or repair shop in locating the problem.

SAFETY FASTER: A Summary of Special Tune for the Road Car

By Dave Childress, #79-894
Backwoods Britain Garage

A full program of modifications for the 1800 MG engine has long been developed and both competition parts and tuning information are readily available through JRT's Special Tune Division. With careful modification, it is possible to obtain much better performance than the standard car and not interfere with the B's everyday use. While not quite competing with V8's, the car can be made much more responsive, and 0-60 in under 10 seconds is quite respectable by today's standards. (Many manufacturers are now only showing 0-50 times in order to conceal sluggish performance).

There are seven recognized stages of special tune, each more powerful, more involved and more expensive than the last. The highest stages of tune are suitable only for specialized competition events such as hill climbs and sprints. For street use, I strongly urge that nothing more advanced than a stage IIIb (118-120 bhp) engine be considered. Development to stage IV and above requires the use of triple valve springs and the resulting wear on the valve train produces engines with very short life spans. Additionally, the more advanced engines do not have good torque at lower rpms and sources of high octane fuel are becoming scarce. A stage III engine requires 96+ octane using today's rating system at the pumps. Almost any ST work will require the modification or removal of anti-pollution equipment so consider your local laws. Finally, it may not always be possible to find a mechanic both willing and able to work on a modified engine. The stage III engine in my 68 BGT normally idles at 1000-1100 rpm and is not happy to run below 3000 rpm. Valve settings are changed, there is no vacuum advance, plugs and timing are non-standard, etc., etc.

Standard, earlier model MGBs with 8.8:1 compression ratio and twin SU HS4 carburetors should develop approx. 95 bhp. Newer models will do noticeably less as anti-pollution equipment, a lower compression ratio and a single carb have not contributed to improved performance. The older standard of twin SUs has a total intake area of 3.52 sq. in., the single Stromberg 175 has only 2.40 sq. in., a 32% loss. For comparison, competition equipment of twin SU HS6 carbs have an intake area of 4.80 sq. in. or a gain of 36% over older models, and 100% over newer ones. Installation of twin carbs on late model MGBs is feasible, but the power brake unit may hinder the fitting of proper air filters. Neither the HS4 nor the HS6 carbs have provisions for smog devices.

The following chart outlines the various stages of tune for a street use MGB, with the major modifications and expected engine performance shown. Early on, stages of tune were designated: I, II, III (abc). Current ST literature refers to stages A, B and S. I have attempted to show these stages in their most logical order, however, Stages I, II and A may be readily mixed.

O - Standard. 8.8:1 compression, twin SU HS4s approx. 95 bhp.

I - A gain of approx. 3 bhp by careful porting and polishing of the engine head and intake.

II - A gain of approx. 5 bhp by fitting special cam #AEH 864 in place of the standard cam.

A - A gain of 4+ bhp by fitting twin SU HS6 carbs in place of the standard HS4s. The carbs are part #C-AUD 505 and the fitting kit (intake manifold, spacers, gaskets, etc.) is part #STN 0041. It may be necessary to hand-fit the carb linkages and fabricate a choke linkage mounting.

B - A combination of stages A and II. With both cam and carburetors fitted, the engine should develop 104 to 105 bhp. 0-60 mph should be reduced from 11.8 standard to approximately 10.3 sec.

III - A combination of all previously listed modifications plus an increase in compression ratio by milling .062" from the head face. Horsepower should be increased to 108-109. With milling the head, the services of a quality machine shop will be required. Some late model engines may have a problem with the valves fouling the top of the engine block.

IIIb - An alternative to milling the head is the installation of competition pistons which will come further up in their bores and thus raise the compression ratio. (Competition pistons are not to be confused with the high compression ratio pistons stocked by most dealers. The dealer is referring to 8.8:1 ratio engines (HC) versus 8:1 (LC) engines.

S - Proceed with the fitting of cam and carbs as in stages A and B. The standard head is now replaced with a factory modified head that comes pre-polished. Part #CAHT-100A. With approx. 112 bhp, 0-60 times should be reduced to 9.9 sec.

IIIc - A refinement of either stage S tune or stage IIIa. In addition to the modified head, the competition pistons are fitted, resulting in a 10.5:1 compression ratio engine. At approx. 118 bhp, 0-60 should be possible in 9.6 sec.

Notes

1) A full competition head is part #C AHT 552.

2) When compression ratios are raised above 8.8:1, a special head gasket must be fitted, part #C AEH 768.

3) With Stage III or Stage S tune Champion racing plugs N64Y should be used.

4) Additional horsepower will place additional strain on all drive train and suspension components. Only cars in first-rate condition should be considered for special tune modifications. While the engine is out of the car, it would be wise to install a competition clutch assembly (C BHA 4873) and drive plate (C AHT 345). The competition clutch will not increase pedal effort.

5) Any quality engine rebuild will include all new bearings and seals. This is particularly so in a competition engine. All rebuilds will greatly benefit from a first rate (aircraft or race car quality) balance job on the major moving components. For complete confidence, magna-flux the same components for cracks. Highly stressed bolts should be replaced to avoid fatigue failure.

6) A full range of competition parts not mentioned above (shocks, springs, cowels, distributor, additional cams, etc.) is readily available. Ask for a Special Tune list of PLUSPARTS.

7) When comparing prices in the USA with those in England, (Twin SUs, fitting kit and cam, came to $370 in 1979) keep in mind shipping costs and import duties. I have "invested" over $200 in air freight charges alone in building one engine!

8) For those who remain undaunted, the logical place to start any ST development is with the order of JRT's Special Tune for the MGB booklet, part #C AKD 4034.

HAPPY MOTORING.

The Car Radio

By Ron Rosen, #78-650

My unit is the Blaupunkt "Frankfurt" AM/FM stereo, which I would unhesitatingly recommend as being about the finest unit available in its price range. (About $190 before discounts, although it is hard to find big discounts on Blaupunkt.) This unit, incidentally, has an all-black face and blends nicely with the B interior to look like original equipment.

There are two types of radio configurations available, fixed shaft and adjustable shaft. Since most European auto manufacturers standardized their distance between radio shafts (knobs), including B.L., feel free to buy a fixed shaft radio. They are made for your car. You will usually spend more money for an adjustable shaft version made to fit many different domestic cars, and it will generally be a bulkier unit. Before deciding on a particular unit, particularly if it is an adjustable shaft unit, the critical dimension to watch for is depth. (Unless you want to dispense with your defroster hoses.) Measure first.

The B radio will generally install from the front, although on some models it is easier to remove the screws on the fascia and slide the fascia forward to install from the rear. Note: Check operation of lighter, hazard switch, etc. before you have eveything bolted back together -- wires are tight, and have a habit of detaching themselves at the slightest excuse.

The radio opening is somewhat oversize, and requires a steel back-up plate for proper support of the radio, which may be supported by the shafts alone, providing this is in place.

The existing power and ground wires may be re-used, and the addition of an in-line fuse generally supplied with aftermarket units is strongly advised, so that a short in the radio will disable only the radio. (Need we tell you of the MG fuse arrangement?)

The Speakers

The best location for car stereo sound is the door panels. Ask any stereo shop. The only problem is that (1) M.G.B. uses an inexpensive 4" speaker in that location, as are most O.E.M. speakers, and (2) the motoring public is brainwashed to believe that only a big speaker can produce good bass.

This is a sport car, not your living room. Purchase a pair of either Marantz SS-140 or Pioneer TS-107 4" speakers, locate them in the doors and you won't believe your ears. They will bolt in to the same mounting holes in most cases, and are shallow enough in depth not to interfere with the window mechanism. Either one retails for about $49 a pair. If you want additional sound from the rear, then by all means add a larger pair in that location together with a four-way front/rear fader control (unless your radio has one built in).

If you have an early model MGB with no holes in the door, cut them in just below the bottom welt on the door panel in line with the window crank. If you want a more original look, purchase a pair of Ford door grilles in black, available from most car stereo shops. These are oblong and louvered, and are much more in keeping with the interior than shiny sheet metal.

The Antenna

If your antenna is in good shape, and you are not installing a C.B. set, extend it to 31" (optimum height for good FM), and leave it alone. If rusted, it is probably not getting a good ground, and a replacement is a relatively inexpensive item from any radio shop.

If you are installing C.B. now or in the future, I strongly suggest the use of a tri-band disguise antenna. A roadster is, of course, easily broken into or the top slashed for access, and an obvious C.B. antenna is a dead giveaway. The disguise antenna as the name implies looks very similar to your regular radio antenna, unless you get up close, and will serve both functions. Use the Harada TL-11 or Aduiovox CBB-105 (identical antennas), retail only about $20-$25, depending on discounts in your area.

The C.B. Set

Most practical is the "hideaway" type of C.B. with remote control, i.e., all controls are contained in the microphone. The box with the "works" can be stashed under the seat or in the trunk.

These are relatively expensive, however, and you can expect to pay about $150-$200 for this type. If you are installing a regular one-piece C.B., your options are limited.

My own is mounted behind the passenger seat, facing vertically. a 5"x7" inexpensive replacement speaker can be mounted in the aforementioned location under the glove box to bring the CB sound out to where you can hear it. Controls and mike are within reach, however, you will have to 'feel' the controls. This, of course, gives you the advantage of concealment.

The alternative is to mount the C.B. under the glove box, presumably on a slide-mount or notched bracket for easy removal when parked. You will probably have to cut away part of the cardboard speaker panel to accommodate the rear of the C.B., depending on its size.

The Car Radio (Continued)

Ignition Interference

Probably more noticeable on your car stereo than your C.B.

Before you run to the auto store for suppressors, do you need a tune-up? Dirty plugs and points are noise generators, and no suppression will help.

The biggest problem, however, is that of poor grounds -- particularly in our beloved MGB with batteries in the rear and an electrical system from the Titanic. Try grounding the chassis of the radio directly to the firewall, in addition to the ground wire supplied. Scrape paint to bare metal for a good connection.

The antenna ground must not only be good to the fender, but also the fender to the body. Add a ground strap or re-do several bolts removing rust and paint in the process. Don't forget to close the hood every time you try your radio to see if the remedy works. That, too, is a barrier to radiated ignition interference. And the addition of a braided grounding strap from hood to body sometimes does the trick.

(Incidentally, nothing to do with radios: if your car has slow cranking but your battery is not weak, and your turn signals flash slower than usual, and the car loses pep due to a weak spark, add the aforementioned ground braid strap from engine block to body, supplementing the one at the bottom of the block that is probably corroded, and your B will act like it was given vitamins.)

Hope to have helped -- happy listening!

by John H. Twist #78-415

INTRODUCTION

The Technical Chairman:

Allow me to introduce myself as the new technical chairman of the AMGBA. My MG experience covers over ten years, most post-war models, and working both in the US and in England. My first MG was a 1953 MGTD which I purchased in 1968. Prior to that time I knew nothing of automobiles, certainly nothing of their inner-workings. Yet, by reading the workshop manual and working with the TD, I found myself getting interested in the car, and really enjoying building my mechanical skills. Since that time, I've owned several other TD's, a TF, a YT, two ZB's, several MGA's, numerous MGB's, and have recently purchased an MGC and an early Midget. Not satisifed with the training that I could find in this country in 1972, I found employment at University Motors in London, England and worked there for about a year. I worked at several "foreign" shops and an MG dealer before beginning my own business in 1975.

Since 1976, I have worked exclusively on MG's, and continue to do so today. It is my goal to pass on to you, the AMGBA members, any information which may help you in diagnosing, servicing, maintaining, or tuning your MGB, MGC, or MG Midget, or any other MG you may have! I do not have all the answers, and I do not pretend to know all. I look to the AMGBA members to provide me with service hints, tips, techniques, etc. so that I can pass them on to the rest of the members. Please feel free to write or call about any question or any tip you may have about your MG!!

Knowing and Expanding Your Abilities:

I encourage everyone to do their own work. But ... if you have never lifted a wrench before, it would probably be unwise to attempt to replace the 2nd gear synchronizer in your gearbox... yet, even if mechanics are a mystery to you, with a bit of instruction you can certainly change your own oil. Do as much of the work on your car as you can, but be careful not to get into a project too deeply. Restoring an older B sounds exciting; it is easily begun; it takes only two days to completely disassemble your own MGB; it can take five years and $3,000 to put it back together again!!!

Work with a friend! You will both learn from each other. If you do not know the answer to a problem, find someone who does know. Do not cut corners or botch a part of the job; it will only cause problems and, yes, even heartache in the future. Do the job right!!! Be methodical, and be clean with your work and tools. And, if you cannot diagnose the problem, or if you cannot properly fix what is wrong, call or write me or contact your local chapter members for help.

Do not discount your local dealer or repair shop. They often can assist you with your problems if you reciprocate by trading with them.

Be certain you have a good manual and the proper tools! Good luck!

SAFETY FAST!

It makes no difference how fast your MG will go if it cannot stop! The proper functioning of your brakes must always be at the top of your list of priorities. Closely after the brakes comes the steering and suspension. PLEASE! Do not concern yourself with a stereo or a new paint job if the brakes are weak. You owe this degree of safety to yourself, your passenger, and all others on the road.

ATTENTION MEMBERS:

PLEASE SEND YOUR QUESTIONS TO BE ANSWERED, TECH ARTICLES, OR TECH HINTS TO AMGBA TECHNICAL CHAIRMAN, JOHN TWIST, #78-415. JOHN MUST RECEIVE YOUR MATERIAL NO LATER THAN 1 OCTOBER 1980, THE TECHNICAL MATERIAL DEADLINE FOR THE WINTER 1980-81 QUARTERLY.

PLEASE WRITE TO:

AMGBA

TECHNICAL CHAIRMAN
John Twist, #78-415
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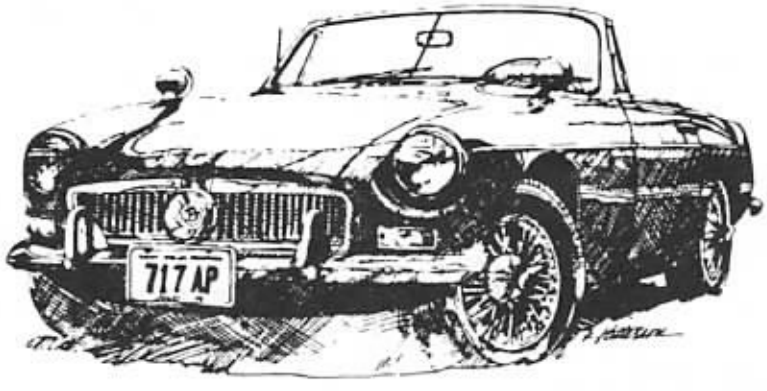


QUESTIONS & ANSWERS

COMPILED AND ANSWERED BY: John Twist #78-415

Q: I have heard that the 74½ model was only manufactured for three months, but I have yet to see one that wasn't made in December of 1974 (with the exception of Steve Harding's BGT).

- Michael Hennessy #78-611

A: The 1974½ model commenced in October 1974 with chassis number GHN 5UE 360301 (the first GT at GHD 5UE361001) and was produced through December 1974 finishing at 367818. A subtraction allows us that 7517 1974½ were built, but the exact number of roadsters and GT's built will have to wait for more information.

Q: My 1500 Midget runs extremely HOT. For instance, if you drive long enough to reach normal operating temperature, turn the car off for a few minutes, and then restart it, the temperature gauge reads HOT until the coolant circulates awhile, and then returns to normal. Is this correct?

- Phil Militello #80-1353

A: The condition you describe is normal, but since overheating in the 1500 Midgets is not uncommon (especially for the 1975 models) and gross overheating can cause the head to warp and can lead to premature engine failure, you may want to follow some or all of the steps listed below:

1) Replace all the hose clamps with the normal American style clamp wth perforated slots for the adjusting screw, instead of the raised slots as the factory clamps have. This will allow you to tighten each hose TIGHTLY and prevent any fluid leaks.

2) Be certain that the cooling fluid is a 50/50 mix of antifreeze/water. You must test the actual coolant, not just the mixture of the coolant in the overflow or expansion tank. To do this, remove the 13/16" black plastic cap at the top of the thermostat housing (use a spark plug socket) and test the fluid at that location. ENSURE that the engine is cool when you make the test, that the radiator cap is on, and that the system is full TO THE TOP when you replace the black plastic cap.

3) Replace the present thermostat with a 160° thermostat. During winter use, a 180° thermostat should be used.

Q: I own a 1972 MGB/GT that is beginning down the long road of restoration. Is it complicated, expensive, or practical to fit an overdrive? Also, on the driver's front fender there is a BL blue motif, but none on the passenger's front fender. It doesn't appear to have had body work -- was there a motif on both sides originally?

- Jim Archer #80-1255

A: The overdrive gearbox must be exchanged for the present all synchro gearbox. It is not possible to simply fit an overdrive unit to your existing gearbox. All that's really necessary is the overdrive gearbox and the speedometer for the overdrive MGB's (although there is only a small error of several percent if you continue to use your present speedo). The engine and gearbox assembly must be removed, the overdrive gearbox mated to the engine, and the assembled unit refit. Shop rate on this project would probably be about ten hours. There is a bit of wiring which must be done before the unit is fit to the car, but the wires are in place at the main to rear loom connections. The gearbox is sometimes difficult to find, and prices vary from $200 to $500. Based on a shop labor rate of $25/hour, you could have $550 to $850 invested (including new clutch pieces at about $100). It is a nice extra! But expensive.

The factory parts books call for two motifs per vehicle, although I've seen many B's with only one motif. Later motifs were only glued in place. Some MG's are damaged in shipment and are repaired in Nova Scotia. Perhaps it was lost or removed there? Perhaps our readers have comments.

Q: I have a 1970 MGB/GT with factory wire wheels. I would like to change to a 13" x 6 bolt-on Aluminum wheel. Which parts are necessary for such a conversion?

- E. M. Bustamanate #80-1266

A: Switching to the bolt-on wheels will require disc wheel hubs on the front end. The disc and wire wheel hubs are interchangeable and any disc wheel hub from 1963-1980 will work. The rear end will also require disc wheel hubs. These hubs have been in use since 1968 on both roadsters and GT's, and were also used on the GT's since 1966. They are also interchangeable with the wire wheel hubs.

However, the wire wheel differential is about an inch wider than the disc wheel differential, and you will necessarily have rear wheel-well clearance problems with such wide tires. You will have to flare the fenders, both front and rear, I would think.

There will also be a problem with the speedometer since the circumference of the new 13" tires will probably be quite different from the 14" tires. You will need either another speedometer, if you can find one clocking about the right number of turns per mile, or you will have to fit a gear reduction box to the speedometer cable.

You might consider another type of wheel, perhaps as Jim and Jill Locke have fit to their MGB (see Performance and Upkeep).

Q: In January, I bought a Limited Edition MGB. I've had an oil cooler installed since it was not a standard item. What else can I do, or what other items should I add, in order to extend engine life?

- Michael R. Radisich #80-1119

A: Extending the life of the engine and the life of the car is best done by following some very basic rules. Don't neglect it, don't abuse it, and keep it clean. Lube the front end and change the engine oil and filter every 3000 miles or three months. Use a good grade oil (e.g., Castrol GTX). Follow the service maintenance schedule (A Service, B Service, etc.) rigorously, or even speed it up. Don't drive the car in the winter if salt is used on the roads. If something breaks or stops working, fix it right away. Find a service shop you can trust or do the work yourself. Good luck!

Q: I own an MGB/GT (1969) and an MGB/GT (1967). I am restoring the 1969 BGT and would like to fit the dash from the 1967. Will it work?

- Weldon P. Corbitt III #80-1339

A: Unfortunately, no. The bolt patterns and the shape of the interior changed so dramatically between 1967 and 1968 that fitting the earlier dash would be an extremely time consuming and probably frustrating task, and it might not look good when you were done.

Q: My trunk will not open, either from the locked or unlocked position. What can I do?

- David C. Smith #80-1346

A: If the lock assembly is tight in the boot lid, with the key lock in the vertical position, grasp the lock and lock handle with your thumb and forefinger, TIP the assembly to and fro while attempting to bounce the boot lid. An extra person helping to "bounce" the lid will help. If the lock assembly is loose, or if you have no success opening the boot, you will have to gain access from the cockpit area.

Remove the plyboard panel at the rear of the cockpit (above and behind the batteries) by drilling out or removing the rivets. Access to the boot lid latch is then made by a long arm!

Examine the catch assembly, ensure that it is opening fully when the button is being depressed. Loosen the two 7/16" head bolts and lift the "U" catch to its highest position and tighten the bolts. Fit the boot lid carefully, perhaps bending the "U" catch fore or aft slightly to ensure proper alignment.

Q: I am interested in putting the Buick/Olds 215 or the Rover 3500 engine into an MGB or MGC. Can you offer any suggestions or help?

- Bruce H. Ransom #80-1419 and
Brian Zenobi

A: Gary Grady #79-722, wrote an article about his conversion in the Spring AMGBA Quarterly. A gentleman with a very nice TC at the National Convention explained to me that he was doing a 3500 V8 as closely as he could to original. Perhaps when the project is complete he could enlighten us! You might order up

AKD 8468 (MGB/GT V8 Workshop Manual Supplement) from your dealer, if he can get it. You might bribe your local JRT parts man so that you can sit in front of his microfilm reader for several hours, studying the microfilm with the V8 parts. In any case, it's a massive undertaking, filled with unexpected problems. But then, the finished product is probably worth it!!

UPKEEP AND PERFORMANCE HINTS

Compiled by John Twist #78-415

Dual carb conversion. When I switched my 75, I had good success by cutting one of the fiber spacer blocks in half and using one piece on each carb, thus moving the carbs closer to the engine, allowing room for air cleaners. To allow movement of the throttle arms, I cut two vertical slits in the heat shield. I used a pair of air cleaners from J. C. Whitney which are less than an inch thick and clear the brake unit with room to spare. They also seem to work well and present a very neat look in the engine compartment. To cut the blocks, I carefully marked the center all the way around the block, then held it in a vise and cut half way from each end with a hacksaw. I finished the cut sides with fine paper on a belt sander mounted in a vise, measuring the parallel surfaces with a vernier caliper.

Air dam/front splash apron. I had a badly bent splash pan when I purchased my B, and after checking the price of a replacement, and the price of aftermarket spoilers, I decided to construct my own. I used a 1/4" thick piece of lexan 61" x 9", the lexan being of dark tint. I matched up the bolt holes, and cut out the air vents, and cut the bottom edge up to a point on each end. The lexan flexed nicely to the correct curvature, and gives a different look as it is partially transparent.

Aluminum wheels. I put a set of Toyota Supra wheels on my car because they were available at a reasonable price, and made a nice looking wheel on an MGB. Although the bolt patter is the same, I found considerable work necessary, but with worthwhile results. The center of the wheels must be turned out to clear the front hubs of the B. As I have no lathe, I mounted the wheels on the rear of the car, blocked it up, started up the engine, and with a metal cutting tool, used the rear axle as a lathe. I know it sounds crazy, but it worked great! Also needed are special lug nuts with a 3/4" OD and a 1/2" thread, available from aftermarket wheel dealers and would be ones which you would use if you were fitting "mags" on a 3/4 ton eight lug Ford truck. Cut off the lugs with a tubing cutter to a length slightly less than the thickness of the wheel, and bolt 'em on.

- Jim and Jill Locke #80-1319

TOYOTA SUPRA WHEELS, ON THE MGB OF JIM AND JILL LOCKE, #80-1319. WHAT DO YOU THINK?

Windscreen wiper blades. Regarding replacement of windscreen wiper blades, I think I may have a solution. I found that "Tridon All Size Refills for Metal Blades" fit my 1974 B roadster. The refills slide right in. I don't know if they are available in the US, but they are in Canada. Two suggestions for these Tridon refills: 1) Snap it off slightly longer than the original blade; 2) Slide the refills in from the top, as the lower end has a smaller clip, presumably this smaller clip is to secure the refill assembly. I had a problem with the blade sliding out of the body of the refill, but I glued it in place with some epoxy glue. Tridon's address is: Tridon Ltd., P.O. Box 5029, Burlington, Ontario L7R 4A2

- Gary Gillis #77-362

Wire Wheel Knockoffs. I disagree with the info Steve Canaday #80-1078 gave on the tightening of wheels (Summer Quarterly, page 176). He states that he has been told that you cannot tighten the knock-off too tightly. This is not true. I have owned MG's for 10 years (67BGT, 70 BGT, and now a 73 BGT and 73 B) and all of the GT's have had wires, so I have had to deal with most problems associted with them on my own cars, plus what I have run across as a mechanic.

It is true that a loose knock-off will cause a "klunk" but if the wheel is fitted properly, this should never be a problem. To properly fit the wheel, it is most important that the wheel is off the ground. Never tighten the knock-off with the weight of the car on the wheel.

When the knock-off is subjected to over-tightening, the mating faces are forced into the hub and cause the center to bell out. If this over-tightening continues with each replacement of the wheel, it will eventually ruin the wheel as the damage is progressive. So, make sure the knock-off is on tightly, but don't over-use your hammer.

(ED. NOTE: In my experience with wire wheels, I have seen two wheels so overtightened that they were ruined. I

believe it is difficult to grossly overtighten the wheels with the octagon spanner and lead hammer, but Bill's comments are well taken.)

Removing the Rear Wire Wheel Hub. Removing the rear hub can be a problem if you don't have the proper puller for the job. The puller recommended in the manual is expensive, especially if you just need it for that one job. If your need for this puller is infrequent, try this instead:

Cut a piece of 1-1/2 inch wooden dowel to 2-1/2 in length. Remove the large nut that holds the hub in place, place the dowel against the end of the axle half-shaft and replace the knock-off. As you tighten the knock-off, the hub will be drawn off the axle. Quick, easy, and cheap!!

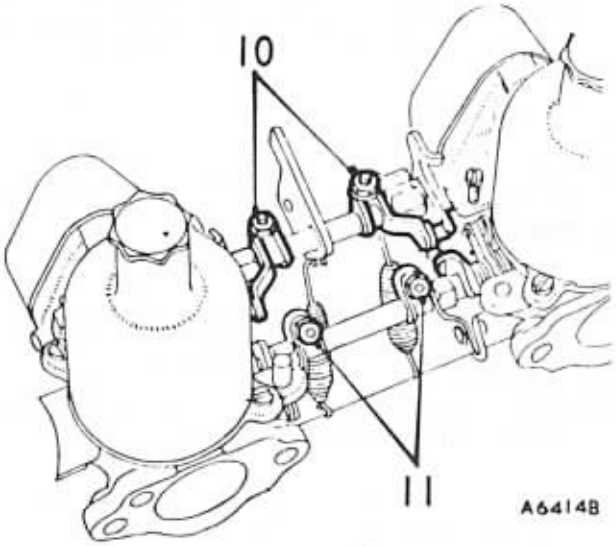
(ED. NOTE: It is usually the split collar, just under the castellated nut which keeps the hub fixed to the axle. You can remove this split collar with a long punch and hammer, tapping against one side of the split in the collar. Once this has popped free, grasp the hub with your hand, pull very hard, and tap the hub with a hammer. This will often do the trick, too.)

Carb Springs. Dave Childress' suggestion to carry an extra carb spring is certainly correct -- but if you need the throttle return spring, and you are not carrying one in your tool kit, you can use the spring from the choke linkage.

Broken Throttle Cable. Should your throttle cable break just where it joins the linkage, and you find yourself stranded, you can get yourself going in most cases by slackening the throttle pedal positioning screw found under the bonnet immediately above the throttle pedal. If this screw is backed out, enough travel is restored to enable you to reconnect the linkage and make it back home. Believe me, that trick helped me out in a pinch!

(ED. NOTE: Travel can also be afforded by repositioning the throttle linkage screws shown as #10 in the illustration.)

- Bill Tolar #80-1130



A Arm Bushings. If the bushings in your lower control arms wear out more often than they should, install four steel and rubber bushings as used on the MGB/GT V8. These are available from Start Your Engines. These are made to withstand more rugged use than the stock MGB bushings, but the bad news is that they cost $13 each, compared to 60¢ for the stock bushings.

(ED. NOTE: William Gardiner #76-131 also wrote concerning the problems with the stock bushings, and suggested the Delron(?) bushings that Huffaker has available. The problem with the stock bushings seems most acute in the B's with the raised suspension. These bushings are the same ones fit to the MGTD, MGTF, and the MGA, and now the B. They have not caused much problem on the earlier MG models. Before refitting new factory bushings, be certain to read the section in the workshop manual regarding the correct procedure -- i.e., do not tighten the nuts until the car is on the ground and under load.)

Tires. To Thomas A. Stanko, I use Bridgestone 185-70 HR 14 tires on my rostyle wheels and have had no problems with clearance. If Michelin doesn't make what you need, I suggest Bridgestones as an excellent alternative.

- Tim Flowers #79-885

Starteritis. A condition that occasionally afflicts the Mark I MGB (63-67) is the jamming of the starter to the flywheel. It is easily diagnosed, as when the key is turned to the "start" position, only the sound of the solenoid will be heard (a dull clunk or click). My short term solution to this problem is to: 1) jack up the passenger side of the B and remove the two 9/16 head bolts holding the starter to the engine backing plate; 2) position a durable screwdriver between the starter assy and the engine backing plate and with a hammer, drive the screwdriver into the gap between the starter and backing plate, until the starter drops free of its locked engagement with the flywheel; 3) replace the bolts in the starter, and away you go.

(ED. NOTE: Fred and I discussed this problem at some length, which not only afflicts his Mark I MGB, but all TD's, TF's, MGA's, and the early B's. The problem is caused from wear on the ring gear on the flywheel. When the engine is shut off, it usually stops in one of two positions, 180° apart (the pistons all about equal height in their bores). These two positions, then, get most of the wear inherent in the "bendix style" starter. Eventually the teeth on the flywheel are reduced to a fraction of their original size and shape, and instead of engaging the flywheel teeth, the starter often "climbs" onto them, sometimes even bending the starter armature. To completely solve the problem the ring gear must be replaced. The gear is about $30, and the shop time involved is about nine hours (that's about $250!) However, to other methods of freeing the flywheel/starter exist, both of which should be tried before Fred's method -- although if the engagement is really tight, then the starter must be removed.

Rocking the car: With the gearbox in fourth, rock the MGB backwards, sometimes this rocking must be rather violent with two people involved. When the starter breaks free, the car will move backwards, engine turning.

Rotating the armature: Remove the cap which exposes the front end of the starter armature (1-1/2 inches long and 1 inch in diameter). Sometimes a long screwdriver must be used with a hammer to tap it off. Then, using a 1/4 BSF open end or a slightly worn 7/16 US wrench, rotate the armature in a clockwise direction (as seen from the front). A 90° movement is usually all that is necessary to free the starter.

WARNING: Do not attempt to free the starter by towing the car forward, or any means more "violent" than rocking the car, or damage (more damage) can result.

- Fred Mannering #80-1209

TECHNICAL FEATURES

The Perfect Air Cleaner

Since the air cleaner, along with perhaps the valve (or cam covers), is probably the first thing you notice on an engine, haven't you sometimes wondered what would be the perfect air-intake device for your pre-1975 MGB? I did! And I made quite a mountain out of this molehill before making a choice. Dissatisfied with the ugly, clumsy appearance, and the unwieldiness of the stock Cooper setup on my 1974 MGB, and having been beguiled by a variety of advertisements for "free flow air cleaners," I began over two years ago to look for an ideal air cleaner for the MGB's dual 1-1/2" SU carbs. I wanted something that would offer minimal resistance to the incoming airflow while protecting the engine, but, unlike the Coopers (in my opinion), would represent a good visual and functional design consistent with everything else in the engine compartment.

After trying or looking over, and rejecting, virtually every aftermarket "custom" filter available in this country for this carb, and asking myself, "What kind of free-flow filter might be used by an auto manufacturer, a fleet owner, or a racing team?", I set to look for a simple, functional, appropriate design readily and economically available as a standard item. I looked at pictures of engines in magazines, looked at engines in other cars, and when through a series of MG road test reprints. I thought about just exactly what I would want in an air cleaner if I could design my own. I examined the factory air cleaner on the MGA, with its messy looking oil-wetted cloth element, and looked at the various filter elements sold at local auto parts stores. Finally, I came to two conclusions: 1) the correct "classic English" look for the SU carb is, if anything, the round pancake filter, of whatever manufacture; and 2) the best pancake filter for this carb is the standard paper element, disposable type sold for the MGA and certain older Volvo models as the FRAM CA199-2, the Hastings AF-78, the Motorcraft FA-24(2), the NAPA 2175, and the WIX 42175(2), as well as other manufacturers.

The paper air filter element has long been endorsed through use by manufacturers of all types of vehicles. The entire cannister, as the stock air cleaner, and the well-made-but-expensive K&N, attaches to the carb with two bolts. Easy removal facilitates carb adjustment of filter replacement.

The pancake cannister looks just right on the SU carb -- in fact, the FRAM CA199-2 that I use looks smarter and more appropriate to me than any "beautifully chrome plated" custom job -- at least on my mostly stock engine.

These throwaway cannisters are readily available, per factory maintenance they need changing only once a year (SEE ED. NOTE), and not the least important, they are cheap! The FRAM is only $7.70 per pair, less than two replacement filters for the Coopers air cleaners. One drawback to the paper element, is that it is not impervious to moisture, and would be ruined if badly wetted -- so keep them covered or remove them if you are washing your engine.

So, if you want a low cost, readily available, convenient, and attractive alternative to the big Cooper silencers furnished with your dual carb MGB, try a pair of these disposable paper-element pancake filters. See if you think they make sense!

(ED. NOTE: The original Coopers filter cannisters do provide a bit of silencing of the intake, some of which may be lost with the pancake type -- perhaps you enjoy the sound of the gasping intake (it does make it seem faster!). Replacement of any air filter should be done as often as it's necessary, and not necessarily on an exact basis with factory information. Generally, if the filter looks dirty, change it. Or you can test your filter blockage by doing some highway/expressway tests as follows:

With the air cleaners in place, drive up the steepest, longest grade you can find, at the highest speed you dare (a function of local laws, local enforcement, and SAFETY). Note the ease of acceleration while on the grade. Then, remove the air cleaners and try the same grade again, at the same speed, and again note the ease of acceleration. If your air cleaners are too dirty, the engine will not be able to breathe well, and you will not have as much power available as with clean filters, or with no filters.

Another hint -- if you like the pancake filters, buy two sets at the first time -- so you're never caught on a Sunday with all stores closed and you need a set of filters!)

- John D. Lowther #75-025

NEGATIVE EARTH CONVERSION

The GHN3 (Mark I) MGB's were supplied from the factory with a positive earth (ground) system. This system was reversed in the GHN4 (Mark II) MGB's built 1968 and newer. If you are installing a modern radio/cassette with a negative earth (as most or all are now supplied), the easiest method of providing power for this radio is by switching the MGB from positive to negative earth. This presents no problems in the 1963 and 1964 models with the three-main engine and mechanical rev counter. However, in 1965 and until 1967 the tachometer was electric with a positive earth wiring. Switching to negative earth in these years (65-67) necessitates exchanging the tach, and that's a problem.

If you wish to change earthing systems, and want your tach to work, then the older 4" face tach is most easily replaced with the RVI1433/00 or RVI1419/00 unit from a later MGB (68-72) but the face size is 3-1/2" which causes dash mounting problems, or at least a style mis-match on the dash. I do not know of a 4 cyl neg earth 4" face tach available to make this job easier. (NOTE: PLEASE, if any of our readers know of a replacement unit -- or know where to have the 4" tachs rebuilt to accommodate neg earth, please let me know!!!)

1) Disconnect the battery(ies), remove them from position, clean all posts, clamps, and especially the earth strap/battery bracket connection. Replace the batteries 180° from their original positions and reconnect all the cables except the earth cable. NOTE: If the MGB yet has the lucas style terminals, rather than the "wrap-around" American-style terminals, the lucas terminals must be removed, as their sizing will be incorrect. To remove the lucas clamps, with the batteries out of position, MELT the clamps off with a propane or oxy/acet torch. Cutting the clamps off will make the battery cables too short to work with. Be certain to fix the batteries into their holders with original or replacement clamps, as excessive bouncing and shaking will take years off the battery life!

2) Examine the ignition coil. The WHITE wire must be connected to the + or CB terminal; the WHITE/BLACK wire (distributor to coil) must be connected to the - or SW terminal. (CB = contact breakers; SW = switch; reversed in this application since the batteries are being reversed.)

3) Reconnect the battery earth cable.

4) Remove the BROWN/GREEN wire from the F (Field) terminal on the voltage regulator. Either brush this wire against the hot post on the starter solenoid or use a jumper wire from the solenoid to the BROWN/GREEN wire to make a MOMENTARY (or flicking) connecting. This reverses the magnetic field of the generator. Reconnect the regular wire. Start up the engine and ensure that the ignition light is working properly (ON when ignition ON, ON at very low rpms, OFF above about 1000 rpms, and OFF when ignition OFF). WARNING: If the ignition light stays ON when the ignition is OFF, IMMEDIATELY disconnect the loom (brown wires) from the starter solenoid.

5) With the ignition ON, turn on the heater blower and judge the amount of air which is being blown into the footwells. Then reverse the wires at the back of the heater motor and again judge the amount of air being blown. Use whichever connection (usually the second) affords the most air movement.

6) From a newer MGB, or by handlettering your own, place a warning label under the bonnet and on the battery cover: "WARNING -- This vehicle wired NEGATIVE earth."

Good luck with your conversion -- if you have any questions, call or write the Tech chairman.

- John H. Twist #78-415, with notes from Matthew Graham #80-1054

REMOVING EMISSION CONTROLS

The emission control systems incorporated into the MGB beginning in the 1968 model year are of three main varieties: Exhaust Emission Control (air pump and injectors, and gulp valve); Fuel Evaporative Loss Control (charcoal cannister, closed petrol tank, integral carb overflow connections, loss of Smith's "Emission control valve"); and internal carb changes (from HS to HIF carbs, from HIF carbs to the single Stromberg, and different arrangements of needles and crankcase breathing throughout the past 12 years). Attempting to condense all necessary information into one article is impossible. Each year is slightly different in its manufacture and systems. Some of the specific parts were used for several years, then dropped from use. And, opinions on the removal of certain items differ, either in method or whether they should be removed at all. Each MGB is slightly different from all others. What works wonders on one MGB may not work well on another.

Why remove any of the systems? Generally, your acceleration may improve; your deceleration will dramatically improve; your mileage may improve; any backfiring or rough running due to problems in any of the systems will be eliminated; the cost of removing the entire system is often less than replacing any single part of the emissions systems. But remember! Removing the systems may be a violation of Federal, State, or Local laws depending on WHO removes it, and WHERE it is removed. CHECK IT OUT. We do not encourage you to break the law.

In this first of three articles, we will explain how to remove the Exhaust Emission Controls on all MGB's 1968 to 1980. In the second, we will explain about the fuel evaporative loss controls; and in the third about the carbs and special tuning for the "depolluted" MGB's. Tuning is often test and trial, with some basic rules being followed. My suggestion, initially, is to follow the tuning information given on the car. In the later article we will trace certain methods of getting the best power or best mileage from your engine.

Exhaust Emission Control Removal:

1) Remove the bonnet support and lift the bonnet to its highest position, supporting the bonnet with a broomstick securely. This allows much more freedom in the engine compartment. Place towels, blankets, or fender covers on each fender to prevent scratching.

2) Remove the airpump (#5). One long 5/16 bolt/nut holds the airpump to the thermostat cover. Remove the two air lines from the pump. Remove the adjusting strap from the airpump (1/2 socket) and remove the airpump from the engine. Remove the adjusting strap from the waterpump bracket (1/2 wrench). If the pulley prevents the nut from being withdrawn, remove the fan/pulley assy, first loosening the alternator. This adjuster strap must be removed, as, if it loosens during engine operation, it could fall into the alternator fan. REMEMBER to remove the air pump belt!

3) Remove the air manifold (#1) from the right side of the head. The air manifold may be bolted to a rear head nut, and may be removed from that fixing point with a 1/2 socket. Remove the four injectors with a 7/16 wrench. These injectors are usually easily removed. If there is some difficulty in loosening the injectors, use a 7/16 line wrench to break the injectors free from the head. Or, as a last step, cut the air injector just above the nut, and use a deep 7/16 socket to remove the injector. REPLACE the air inectors with either: 4 7/16 x 1 SAE bolts (driven by a 5/8 socket); or by 4 pipe plugs with a 7/16 x 24 thread; or by cutting off the heads of the 7/16 x 1 bolts, cutting a screwdriver slot with a hacksaw, and screwing the bolts into the holes until TIGHT and grinding down the surface flush with the head. In any case, the right side of the engine now has a much neater appearance, and the #1 spark plug can be removed and replaced easily.

4) Remove the hose connecting the air pump to the gulp valve from its bracket on the thermostat cover. Hold the tall nut with a 1/2 open end wrench and use a 1/2 socket to remove the bolt from the top of the tall nut. No need to replace the bolt. Remove the hose from the gulp valve.

5) Remove the gulp valve and bracket (#9). It is often necessary to remove the two bolts securing the valve to the bracket with two 7/16 wrenches to enable removal of the 15/16 head bolt securing the bracket to the intake manifold. After the bracket has been removed, use the larger of the two copper washers when replacing the 15/16 cap bolt to the manifold.

6) Remove the 90° elbow from the intake manifold and tap the hole 1/4 NPT and replace the elbow with an allen driven 1/4 pipe plug using teflon tape or pipe compound to seal the joint. (If you cannot tap this yourself, then plug the line (hose) from the elbow with a 1/2 bolt or an old condenser from the distributor (which works perfectly). There must be NO air leaks at this point!!) A bit of grease on the end of the tap will prevent the aluminum chafings to enter the intake manifold in great amounts (dual carbs) although the aluminum has never caused problems in the cylinders in the depolluted cars I've seen. More care must be taken tapping the single carbed manifolds, as the iron filings present a greater danger for damage.

For the early B's with the Smith's emission valve (#7) (looks like the Seattle Space Needle!), the 90° elbow is also part of the Smith's valve. Still remove the "T" fitting, tap the manifold, but instead of the pipe plug, fit a 1-1/2" length of 1/4" pipe and reconnect the valve.

7) Remove the "Vacuum sensing tube" (#8) and the fitting in the manifold (dual carbs) and fit into the hole one of the two 5/16 and 24 bolts left from the air system. Be certain to reuse the copper washer, as there must be NO air leaks at this point. On the single carbed B's, run the vacuum advance tube for the distributor directly to the nipple on the manifold (removing the "T" fitting, if any). If there is no vacuum advance line, add one. If the vacuum advance line runs first to a valve at the brake master cylinder, reroute the line directly from the vacuum advance on the distributor to the manifold.

8) Start the engine and let it warm. Then set the idle to 800 rpm.

9) Reconnect the bonnet, remove all extra nuts/bolts from the fender "trays" and all tools from the engine compartment. Now it's time for the test drive.

10) A note for all B's with the spark advance switch located on the brake/clutch master cylinder housing: This switch is operated only when in fourth gear. It derives its power from a WHITE wire entering the gearbox loom (connections made at the right inner fender). If you are routing the vacuum advance line directly to the manifold (a good idea), and if you do not have overdrive, then DISCONNECT this WHITE wire. If you do have overdrive, or keep the switch in place, wire a FUSE into the gearbox circuit. Many a wiring loom have incinerated from the reverse/second/fourth switch failing!

11) Work with the timing and carbs making only SLIGHT variations and recording the performance differences. If you have questions or problems or a "better idea" please contact the Tech chairman!

- Matthew Graham #80-1054 with notes from John H. Twist #78-415

SIMPLE ELECTRICAL PROBLEMS

Headlights:

*Glowing or very dim -- faulty earth connection
*No illumination BUT bright light indicator is on for both highs and dims -- faulty earth
*High or low beam not working on one side -- faulty bulb or faulty connection (BLUE/WHITE = Bright; BLUE/RED = dims)
*Bright light flashers not working -- BROWN/PURPLE fuse

Parking Lights:

*One side (left or right) not working -- red fuse
*One light not working -- probably the bulb
*Diagonal not working (e.g., front left, right rear) -- red fuse

Turn Signals:

*Neither dash nor lights illuminate -- faulty HAZARD switch. Snap the HAZARD switch OFF and try again.
*Lights and indicators illuminate but don't flash or flash very slowly -- faulty flasher.
*One side flashes properly, one side doesn't -- faulty bulb front or rear.

Loss of Instrumentation: Tach, Turn Signals, Brake Lights --

-- WHITE/GREEN fuse

Reverse Lights:

*Never on -- check bulbs or faulty reverse switch
*Always on -- faulty switch on gearbox -- simply disconnect lights

Horn:

*Doesn't work -- BROWN/PURPLE fuse faulty or wires broken loose from horns
*"Chirps" but doesn't "blow" -- faulty horns (common on newer cars)

Starter:

*Solenoid clicks rapidly -- low charge on batteries or bad clamps or faulty earth connection at batteries
*Solenoid clicks once, ignition light dims or goes out, ignition light comes back on slowly -- bad clamps or earth connections
*Clicks with "dull clunk" pre-68 B's and all Midgets -- starter caught on flywheel -- see Fred Mannering's article
*Whirs but doesn't engage (mostly 75 and newer Midgets) bendix dirty, starter must be removed (Sigh!).

- John H. Twist #78-415

CONCLUSION

I want to thank all of the members who wrote with questions and tips. And again, please contact me if you have other questions and other tips!

- John H. Twist #78-415
AMGBA TECHNICAL CHAIRMAN

REMEMBER, DEADLINE FOR TECHNICAL MATERIAL FOR THE WINTER 1980-81 QUARTERLY IS 1 OCTOBER 1980.

ANYTHING RECEIVED AFTER DEADLINE CANNOT APPEAR IN THE WINTER ISSUE!

SEND YOUR QUESTIONS TO BE ANSWERED, TECH ARTICLES, AND UPKEEP AND PERFORMANCE HINTS, TO AMGBA TECHNICAL CHAIRMAN, JOHN TWIST, #78-415.

PLEASE WRITE TO:

TECHNICAL CHAIRMAN
John Twist, #78-415
614 Eastern Avenue SE
Grand Rapids, MI 49503
(616) 245-2141

FIRE! Carelessness, mixed with a bit of gasoline, can incinerate your MG. To be caught in a spreading gasoline fire is thoroughly terrifying. Yet, several common sense steps can reduce the danger of a fire while you work on your MG.

1) ALWAYS have a fire extinguisher at arm's length whenever working on the fuel system -- under the car or under the bonnet.

2) NEVER use a torch near the petrol tank.

3) Keep your trouble light FAR AWAY from any source of dripping gasoline (eg, while removing the fuel pump).

4) NEVER use gasoline to clean parts. Use kerosene or mineral spirits.

5) NO SMOKING goes without saying.

If you do have a fire, DON'T PANIC, use the extinguisher effectively!

JACKS and JACK STANDS: Any jack, especially the factory jack for the MGB or Midget, is made for lifting the MG, not for supporting it. NEVER even consider working under your MG using only a jack to support the weight of the car. Jacks are for lifting; jack stands are for supporting. Jack stands are available from many discount stores, and all auto parts stores. These stands are absolutely essential if you plan to work under your MG. Simple triangular stands (fixed or adjustable) will suit almost all of your working situations. "Drive-up" ramps are very limiting because of their design and size.

When jacking the MG from the front, leave the gearbox in neutral, brake off, until you have placed the jack stands under the frame. Then put the car in gear and/or engage the handbrake, and lower the jack. Obviously, DO NOT put the car in gear if you plan to turn over the engine! Leaving the brake on, or leaving the MG in gear while jacking the front of the car will necessarily cause the jack to tip. This is an unavoidable situation while jacking the car by its side, and the use of the handbrake in this case is recommended.

Excellent jacking points are: the front cross member (never the engine's sump!); the center of the differential; under either leaf spring; under the rear at the frame; or with the factory jack, the jack tubes. If the MG is older, and if it shows signs of weakening at the jack tubes while using the factory jack, it is best to purchase a good scissors jack or pneumatic jack (depending on your budget).

SAFETY FAST! It does not matter how quickly your MG accelerates, if it cannot stop. The proper functioning of your brakes must always be at the top of your list of priorities. You owe this degree of safety to yourself, your passenger, and all others on the road.

JHT

QUESTIONS & ANSWERS

Q: I noticed that both front engine mounting brackets are cracked on my 1977 MGB. How serious is this? How easy is it to replace the brackets?

Al Ribskis #79-0926

A: Al -- The engine mounts used since 1974½ have more problems than the ones used from 1955 to 1974. The mounting change must have been a combination of cost and space requirements. The newer style of mounts allows the engine to sit lower in the frame, thus lowering the center of gravity. Unfortunately, the cracked brackets are not uncommon. It is important that you correct the problem soon, as the brackets can finally fracture altogether, causing a misalignment of the engine/gearbox in relation to the drive line. The exhaust manifold also takes a terrific strain from this mis-alignment.

The brackets themselves can be replaced by jacking up the engine while loosening and removing the nuts and bolts which hold the bracket to the engine and to the motor mount. Be certain to protect the engine sump from the jack with a piece of wood (a six inch piece of 2x4 will do the trick). If the left hand motor mount is also to be replaced, the steering rack and pinion must be removed first (no kidding!). The brackets cost about $35 a pair from your JRT dealer. See illustration next page.

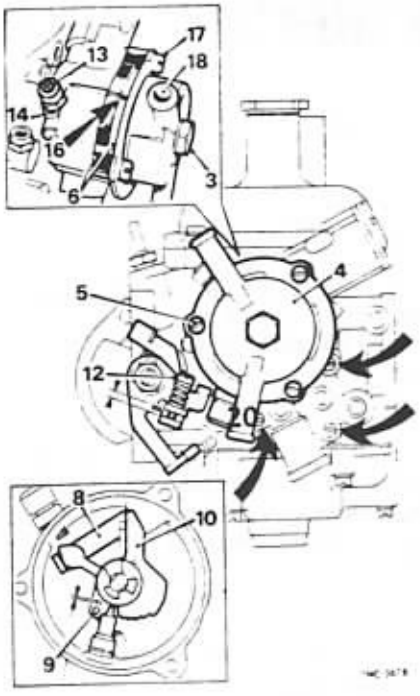
Q: I am very dissatisfied with the automatic choke on my 1979 MGB. It's very hard starting when cold. Is there a remedy for this, or possibly is there a conversion kit to get back to the good old hand choke? I've been to the

QUESTIONS AND ANSWERS (Con't)

dealer with no success.

Alex G Forisich #80-1537

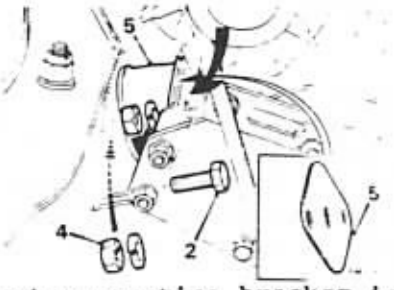
A: Alex -- First of all, if you are still under warranty, work the problem out with your local dealer or another dealer. If you are out of warranty, or don't want to go to a dealer, try to find a good local shop that can help. Once properly adjusted, the automatic choke is really quite satisfactory. Remember too, if the temperature is freezing, allow the ignition to remain "on" for about thirty seconds before trying to start the engine. This time allows the manifold heater to get warm.



There are some items you can examine yourself to insure that the choke is working:

1) Check the water flow. The engine coolant moves from the rear of the cylinder head through the choke to the water pump. Remove the front of the air cleaner assembly and the air filter. Remove the hose connecting the choke to the heater return line (20). Coolant should bubble from the hose without restriction. Then, holding your thumb over the horizontal line's opening, have someone start the engine (WATCH OUT for your hands!). Coolant should run quickly from the choke (20). Reconnect the line.

2) Mark the position of the choke (16). Remove the three screws holding the choke bi-metal spring assy to the choke proper (screws 17), and remove



The engine mounting bracket is shown with the large arrow.

the spring assembly (18). Remove the black plastic cover (6). Ensure that the three screws holding the choke to the carb are tight (arrows). Ensure that the nut on the reverse of the choke assembly is in place and tight (not shown, in line with 3 between choke and carb).

3) Lube the choke assembly with WD40. Holding the throttle open with your right hand (right rear of carb), work the choke mechanism (10) with your left hand. Make certain it moves freely and when left free to move by itself, ensure that it moves clockwise when the throttle is opened.

4) Reassemble the plastic cover and the bi-metal spring assy carefully ensuring that the spring assy fits around the choke actuating pin. Move the spring assy clockwise ½ inch from its initial setting. Tighten the three screws (17).

5) Make certain there is oil in the carb dashpot, and start the engine to determine if the choke is working properly. The further the position of the spring assy (4) to the right (clockwise), the more the mixture is increased and the longer the choke will remain on.

6) Replace the air filter (is it clean?) and inspect the fender trays for tools and parts.

Q: I have investigated electronic conversion units to eliminate the ignition amplifier on my MGB. Are they any good or should I continue to suffer with the unreliable factory equipment?

David D Rothermel #80-1448

A: David -- The existing Lucas ignition amplifier would probably be an acceptable unit if it were mounted on the inner fender, away from engine heat and vibration (or a leaking water valve directly above). As the unit is presently installed, however, it often proves unsatisfactory. (See the Summer Quarterly's "Embarrassing MGB Stall", page 185, for diagnosis). I am familiar with only one aftermarket system,

Piranha, marketed by Nisonger. It costs about $90 and takes about 1.5 hours to install (about $40 at shop rates). I have not seen a Piranha system fail yet!

Q: To improve the looks of the engine of my 1973 MGB I am considering a chrome finned valve cover. Is it important to reconnect the charcoal cannister to the valve cover, and if so, how can it be done?

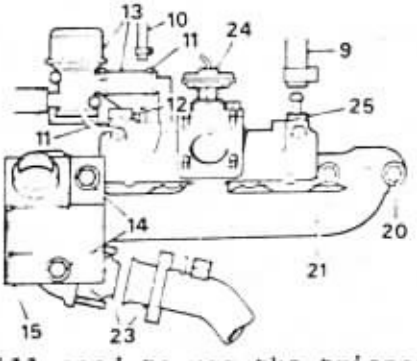
Lynn R Hickman #80-1469

A: Lynn -- The finned valve cover (usually polished aluminum) is a nice extra on any engine. It is important to either fit the cover with a breathing cap, or better, reconnect the charcoal cannister to the valve cover and fit a sealed cap. I have found the easiest way to fit the cannister hose into the valve cover is to drill a hole in the center rear and tap that hole for a ½ inch pipe fitting. Many auto parts stores have a selection of ½ inch brass fittings -- the one you want is threaded on one end, and has a hose fitting on the other that will accept the ½ inch PCV line.

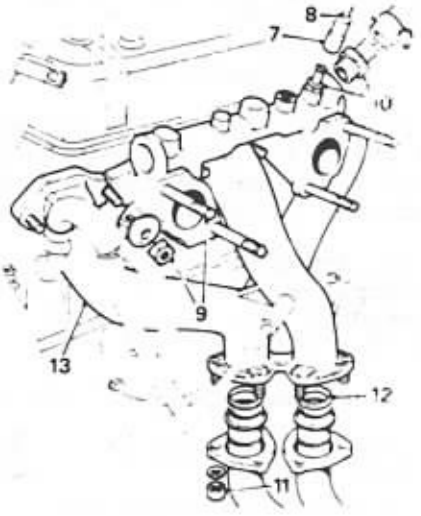
Q: I have removed the air pump and gulp valve, plugged all related ports and hoses, and rendered the EGR valve ineffective on my 1979 MGB. My next project is to eliminate the catalytic converter. How can I remove the converter without changing manifolds?

James F Osborne #80-1047

A: James -- It is not necessary to remove the converter if your aim is to render it ineffective. Once the air pump is removed, the converter no longer works since extra air is no longer being pumped into the exhaust system. If you wish to remove the converter altogether, you will find that a Walker 44657 front pipe will do the job.



You will need to use the triangular ring and "olive" (23) from the old system. Whether the converter, even gutted, provides restrictions to the exhaust flow is debatable, as the mani-



folding is the worst feature of the exhaust. Changing to the original exhaust (seen above) also requires changing to dual carbs (as are all home models) or requires using an Austin Marina intake manifold with some minor changes.

Q: My 1974 MGB is in dire need of a new exhaust system and I am contemplating installing a "free flow" system instead of the stock system. Are the free-flows better than the factory system? Are some free-flows better than others? What about performance and durability. I can't complain about the factory system, though; it lasted for six years and 48,000 miles.

Bruce Magers #75-027

A: Bruce -- If your MGB is really perfect, inside and out, if it runs well and does everything right, if it needs no attention anywhere, and you want to give your B (or yourself) a present, then consider a "free-flow" system. My own impression of many of the aftermarket systems is that they are almost vanity items. The factory system is really quite acceptable and shouldn't cost more than about $180 from front to rear with all hangers and installation. But you probably don't need each item. The "free-flow" systems usually begin at the center muffler so the costs are not inclusive of the front pipe. There is a performance change in some of the systems, but usually only several percent. Perhaps our readers can let us know about their experiences with the various "free-flow" systems.

QUESTIONS and ANSWERS (Con't)

Q: Do you have an outline for installation of the dual carb manifolding to fit my 1975 MGB?

William R Gardiner #76-031

A: Bill -- I do have a set of instructions which I can photocopy and forward to you. The cost of the photocopying and postage is $2.00.

Q: Has AMGBA ever published an article on converting the rear shocks to tube-type shocks? Do you know where I could get such plans?

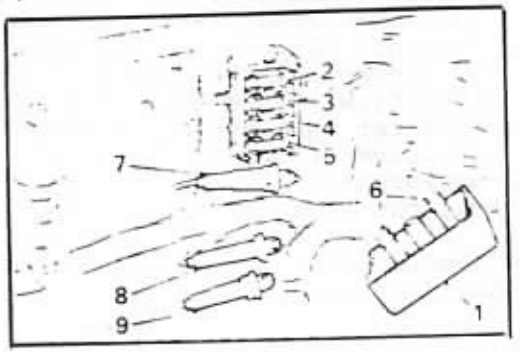
John D Campbell #78-0425

A: John -- The rear shocks on the MGB are often mis-diagnosed as faulty -- it's my experience that they rarely fail. Refitting even used MGB rear shocks will be a lot less hassle than converting to tube type shocks. I have searched thru old copies of the Quarterly and have not found a definitive article. You might contact Koni, who made a rear conversion kit for a time.

Q: Where in the engine compartment of my 1977 MGB is there a positive lead strong enough to attach a battery assisted timing light? And what is the optimum rpm at which I should shift into a higher gear? I have always heard that MG's are supposed to be revved up when accelerating. My normal shifting occurs at 4500 rpms while still attaining 18 mpg despite the pollution control strangulation imposed by the California laws.

Kenneth Hanner #80-1488

A: Kenneth -- The timing light can most easily be connected to the fuse clips on the "brown" side of the bottom fuse, fuse #5 in the diagram. All brown wires are ALWAYS HOT, UNFUSED. All purple wires are ALWAYS HOT, FUSED. Use the engine as earth. Remember that the engine rotates in a clockwise direction, and the last timing mark in a clockwise direction is TDC. Each mark is 5°.



426

The best rpm range for gear changing is largely to be discovered by yourself in your 1977 MGB. Several points are worth keeping in mind -- The more quickly you attempt to accelerate, the more wasteful the engine becomes. Slower accelerations mean better gas mileage. The more quickly the engine turns, the more horsepower it produces, peaking in the low 5000 range. Factory engine specifications allow the engine to be worked up to 5500 rpm with no real danger of engine failure. Straying into areas higher in rpm often cause no dangerous wear -- but only occasional straying! If you have your mother-in-law in the MGB and she hates it, then be cool -- shift about 2500. Never shift below 2000 rpm.

Remember to reverse "shifting up" procedures when "down shifting." As you change to a higher gear, you release the throttle and the engine speed diminishes. When downshifting, you must increase the engine speed while shifting. The more closely matched the shifting rpm with the final "engaged" rpm, the less the wear on the clutch and gearbox.

Q: Apparently, a small number of 1974 MGB's were imported to the US with chrome bumpers and lower suspensions not found in most of that year's model. Do you know what percent of the 1974 production was of the earlier style?

Bruce Ransom #80-1419

A: 1974 was an unusual production year. I've gathered this information from BL and JRT parts books which are not always error free -- but this is the overview:

GHN 5UE 328101	Aug 73	Production begins 10,994 produced 27.7%
GHN 5UE 339095	Jan 74	Large overriders 21,206 produced 53.4%
GHN 5UE 360301	Sep 74	Raised body, etc 7,517 produced 18.9%
GHN 5UE 367818	Dec 74	Production ends 39,717 produced

Therefore, over 32,000 MGB's were produced in the 1974 model year with chrome bumpers. The large black overriders can be removed and earlier chrome overriders used.

Q: Here in West Virginia the winters get pretty cold and we drive our MGB all year round. Which is the best hard top available? Also, since I do all of my own servicing, I would like to know which is the best service manual available.

John R Watts #80-1495

A: The factory hardtop probably

the best, but the large factors seem to be price and availability. Try to find a used one first! Many new MGB owners received a hardtop as a sales bonus. Perhaps someone around your area has a top but has no plans for winter driving! Perhaps our readers can enlighten us about the various types of hardtops for the MG's.

The factory service manual is an excellent publication. It is available through the JRT dealers and also as a reprint by Bentley (Bentley's the better deal!). I'm partial to the Haynes work shop manual for home use. It carefully explains how to use screwdrivers and punches rather than referencing you to a special tool even your dealer doesn't have (or can't find). The Autopress/ Autobook MG Manuals (sometimes by Ball) are virtual reprints of the factory publications -- with no special hints.

Q: I have heard much talk about the 45DCOE9 Weber carb for MG's. Some people say it readily adds the extra zip I want, but it is very costly (about $250 best price) and I heard that tune-ups are very technical and difficult and the car may not run right after that. Is it worth the extra cost? Or should I get old model HS4's or maybe HS6's? I have a 1972 MGB with HIF carbs.

Allan C Freilich #80-1133

A: Allan -- what you've heard is true! The Weber carb will give you all the zip you want (even more). But it is true, too, that they can be problemsome, and expensive. If you consider a Weber, then first find someone in your area who knows the Weber carb very well and will treat you fairly -- or consider working with it yourself. You may find a used one for sale! Some people argue that the fixed needle HS4 is the best carb for the MGB. But the HIF's can provide plenty of power if you're tuned right and have the right needles. HS6's are available from MGC's -- hence in short supply.

By the way, size designation for the SU carbs is based on a bore of one inch. The carb is numbered for each eighth of an inch over one inch. Hence HS1 (Buyeye) = 1 1/8; HS2 (Midget) = 1 1/4; HS4 (MGB) = 1 1/2; HS6 (MGC) = 1 3/4.

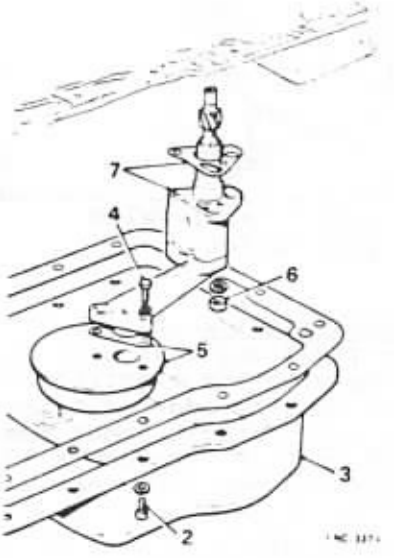
Q: I have a 1964 MGB from which some fool has cut the capillary tube for the water temperature guage. Otherwise the guage appears to be fine. Is it possible to have the tube replaced, and where?

Also, this 3 main engine held 50 lbs oil pressure in very hot weather at 3000 rpm, and high oil pressure (55-60) with additional revs. Now that it's cooler, and since I added a can of STP, the pressure is up to 60 at 3000 rpm. Is this reasonably normal for an MGB? I use Castrol GTX 20W50.

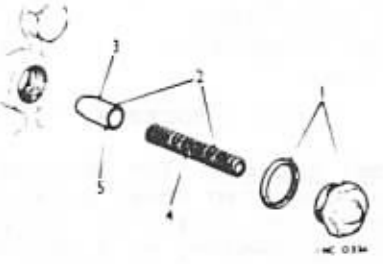
Peter Brunner #80-1571

A: Peter -- The guage can be rebuilt by Nisonger Corporation, PO Box 748, 35 Bartels Place, New Rochelle, NY 10801. Nisonger can provide prices. Keep in mind that if you send them your guage, your MGB will be immobilized since the oil guage is part of the same "Safety Guage." You might also be able to find a used guage. Any guage from a 1956 MGA to a 1967 MGB will work (the faces and styles of illumination change), as will the unit from an MG Midget/AH Sprite 1959-1974.

Oil pressure gives an indication about the general condition of the engine, although you often cannot make hard and fast diagnosis.



Oil pressure continues to build as the engine runs faster -- driving the oil pump above. Once a pressure of 60-70 lbs is reached, the oil pressure relief valve(below) opens and keeps the pressure from exceeding that limit. Top pressure should always be 60-80 lbs. The real

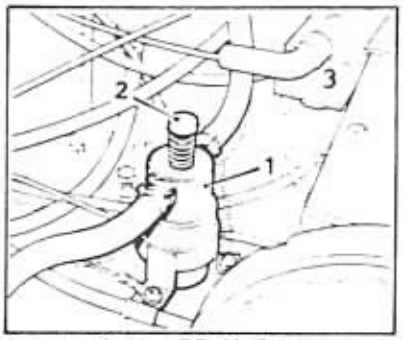


test comes at hot idle. The factory bottom limit is 20 lbs, but 30-40 lbs is very common. Below 20 lbs (at 800 rpms) is an indication either the pump or the bearings, or both, are faulty.

UPKEEP AND PERFORMANCE HINTS

Starting: 1977 through 1980 MGB's with the TCSA (transmission control spark advance) -- identified by a small vacuum solenoid on the master cylinder box -- can sometimes be started more easily in 4th with the clutch depressed. The TCSA allows the distributor advance to work only in fourth gear.

Ken Lynch #80-1268



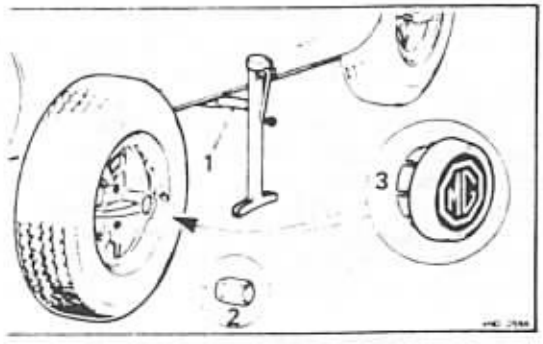
1 - Fuel Cut-off Valve
3 - TCSA Switch

Embarrassing Stall: For all MGB owners (1975 on) that have had their problems with the electronic ignition, I would like to add one thing to the Summer 1980 article about the "Embarrassing Stall." I owned a 1976 MGB with nothing but electronic ignition problems. I totaled it two years later and turned around and purchased a 1978 MGB. I had a problem last summer and I was certain that it was the same ignition problem. The same symptoms existed (not the quickly falling tach -- ED) until I opened the hood and suffered from gas fumes. The Fuel Cut-off valve closed so no gas was getting to the carb. I pushed the button (#2 above) and I was on my way. It happened two or three more times until I replaced the valve -- and that was the last of my troubles.

Glenn E Bortz #78-0619

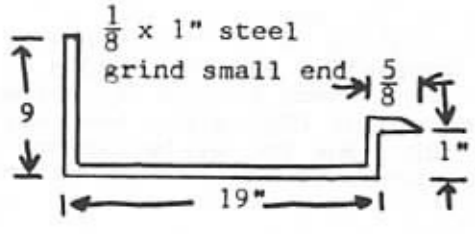
Wheel Emblem: The MG motif in the center of the disc wheel often falls off. The epoxy glues available did not give the strength needed, so I solved the problem by fastening the emblem with a small pop rivet in the center. It detracts from the emblem, but is better than nothing. The Dow-Corning silicone gasket compound works also. Remove the hub from the wheel, apply plenty of this goo to the top of the hub, then press the new MG motif into place, and remove the excess goo. Let this sit overnight before replacing it on the MG.

John R Watts #80-1495



Trunk Refuses to Open: When I had the same problem opening my trunk that Dave Smith #80-1346 wrote about in the summer quarterly, I tried all the conventional methods such as shaking, bumping and pounding. I finally opened it with a jimmy bar. By using the back-up light hole to gain access (just unscrew the lense), I was able to trip the trunk mechanism from the inside! I inserted the bar into the back-up light hole, and moved it around until I could feel the lock mechanism. After a couple of tries, I gave a twist and the trunk popped open.

John R Watts #80-1495



Fuel Pump Switch: Most Mark II MGB's without overdrive should have an unused yellow (overdrive) wire exposed at the junction of the main loom and rear loom (right front inner fender). By joining this yellow wire with the white wire (fuel pump) which exits from the rear loom, the overdrive switch (wipers, washers, overdrive) will work as an off-on switch for the fuel pump. This makes an effective theft control!

Konrad Crist #80-1378

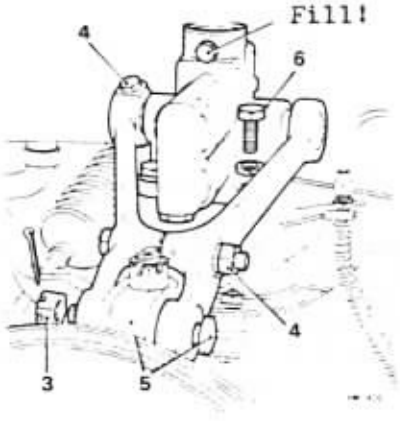
Distributor Cap: For those with the problem of water getting into the distributor and condensing on th causing mis-firing, etc: Clean

bottom of the cap and run a bead of silicone gasket compound around the step-cut lip edge. Then set the cap onto the distributor. The resultant seal will not let water in, and the cap is easily removed.

Konrad Crist #80-1378

Shocks: ATF with seal "sealer" has enabled me to keep all of my shocks working at near original levels, and all four are original with 85,000 miles.

Konrad Crist #80-1378



Tires: My Pirelli P3's are exceptional tires; adhering to the road whether wet or dry, quiet even during hard cornering (to which mine are accustomed). The 165-SR14 size fits perfectly on the MG rally wheels, which concurs with the MG Manual -- the tire company was trying to push the 70 series off on me! The P3's are everything the British claim.

Kenneth Hanner #80-1488

Depollution: I found that I could remove the 90° elbow from the intake manifold, squeeze the end closed, and solder the end. I replaced the 90° elbow with hard setting Permatex and now have a permanent, air tight installation. This is much easier than tapping the intake manifold, and also allows easier reversal of the procedure if the gulp valve were to be re-installed.

Bill Gardiner #76-031

Oil: I used Ams/oil synthetic oil which runs much cooler and gives longer engine life. I also use Ams/oil synthetic gear lubricant in the differential. A nice side benefit is better gas mileage by about 1½ - 2 mpg. Although I have 63,000 miles on my 1975 MGB, I have never had to adjust the tappets -- they don't need it due to the Ams/oil!

Bill Gardiner #76-031

Several club members have written about wonderous effects of synthetic oil. Microlon (who advertised in the Fall Quarterly) sent information regarding the amazing effects of their product. The Tech Chairman wants to know more about personal experiences with synthetic oils or with one-time additives in your MG!

JHT

Depollution: I bought some 3/8" long allen plugs to put into my air injector holes (thread size 7/16 x 20, the tech chairman goofed in the Fall Quarterly on the sizing of the plugs). They fit fine and are slightly recessed in each hole -- out of sight!

Konrad Crist #80-1378

Cleaning: Ample use of Armorall (also sold as Pizazz) keeps the interior, top, tires, and bumpers like new.

Bill Gardiner #76-031

Antifreeze: Antifreeze manufacturers recommend removing the rad cap and warming the engine to normal temperature before checking the specific gravity. You can get false readings with the mixture too cold or too hot.

Tim Handy #78-656

Converting to Negative Earth: I've changed several cars from positive to negative earth with no problems, but the hassle with the tach face diameter is very true. I've come up with a conversion. It requires the original large face guage and a new style guage (68-76). I can provide service at: Route #1 Box 67, Goode, Virginia 24556.

Tim Handy #78-656

Cooling Fans: Faced with a bill of $100 for a new cooling fan motor, I armed myself with a dial caliper and started to search a local wrecking yard for a suitably sized alternative. Much to my surprise, the fan motor fitted to the various compact VW's (Rabbit, Dasher and Scirocco) fits very well into an MGB without too much trouble (and costs only $25 at the wrecking yard). To make the conversion:

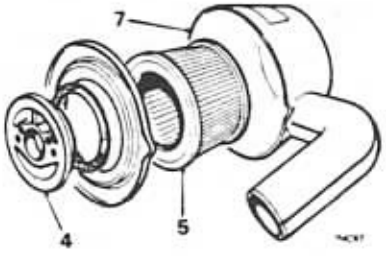
Having located a good, used fan motor, remove the fan from the motor by removing the retaining clip, and pull out the roll pin from the output shaft. Since the VW fan will not fit the later model MGB's, the MG fan must be used. The diameter of the motor shaft of the MG fan is .310" but the Bosch motor is .315" so the MG fan will have to be

drilled out to fit the Bosch shaft (use an 8mm drill). The outside diameter of the Bosch motor is the same as the Lucas motor, so mating the Bosch motor to the MG mountings is easy. Make certain the fan rotates freely, and the drain hole in the Bosch motor is bottom-most. Although the Bosch motor has sealed ball bearings, it is a good idea to run some RTV silicone rubber around the exposed edges of the motor case. The electrical connection is made most easily by using the plug from the old Lucas motor. ENSURE the motor is running the correct direction before making the connections permanent!

Ron Hall #79-719

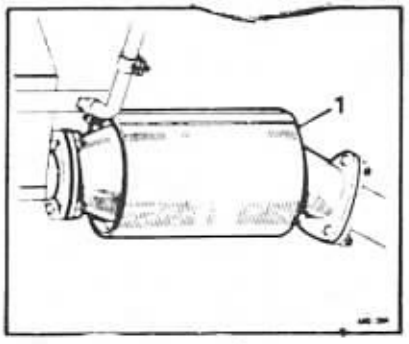
Air Cleaners: I agree with John Lowther #75-025 in his comments about "The Perfect Air Cleaner" in the Fall Quarterly. However, the plate that fits directly onto the carb body (#4) should be left with the carb -- it's part of the carb. The carb breathes better with this rounded throat entrance (this has been flow tested and proven in England). It is necessary, then, to cut the new pancake air filters to accept the plate and its rubber gasket. With a little thought and patience you can make this work. The point is to retain the air inlet plate.

Tim Handy #78-656



Catalytic Converters: The converters included in the exhaust system of the 1976 and newer MGB's have several common problems. First, the triangular flange securing the converter to the exhaust manifold, and the flange securing the exhaust pipe to the converter, both can come loose. When they are loosened (or have fallen away from their position) the exhaust will "chuff" from the loose joint, and the unsupported flange(s) will rattle or jingle. Often both the studs and nuts should be replaced. Use a 5/16 x 1 3/4" stud (fine/coarse) and a 5/16 fine locknut (not nyloc, as the heat will melt the nylon).

The second problem is overheating. If the carb is not adjusted correctly, if the needle and jet are worn from use or if the choke is stuck on, too much gasoline will enter the engine, and much of it will exit uncombusted. This unburned hydrocarbon will combine with the air forced into the exhaust from the "air manifold" and cause the converter to glow bright red! It obviously shouldn't glow at all. This converter overheating can cause the converter to break away from its mounting flange, or worse, crack the exhaust manifold. The high



heat in the converter also causes the stock exhaust system to fail prematurely. The cause of the converter overheating is mixture -- and it must be corrected before the overheating damages the exhaust system or even catches the carb on fire!

Piranha Ignition: Ensure upon installation that the 12V wire from the amplifier unit is connected to the fuse box (white side of white/green fuse). If connected to the white/green wires at the ignition coil, the unit will not receive the voltage it requires, and will work erratically.

Cooling fans: The Lucas cooling fans can be rebuilt by using 1/4 x 1/4 alternator brushes as replacements for the original ones. Be certain to oil the front bearing (fan end) and to put a bit of grease in the back bearing before re-assembling. It is imperative that the case and front bearing housing be aligned properly (mark the case and end before disassembling!). Incorrect alignment will cause the motor to run backwards. Ensure that the fusebox wire from the fans' fuse (white/brown) is connected to the white/green fuse. This allows the fans to run only when the car is running. As originally placed, the fans run anytime which drains the batteries, overworks the alternator, and causes people to run up to you to tell you your MGB is still running.

Fuel Filter: I found a clear, plastic filter with a replaceable element the best for my MGB. The filter costs about $5, but the replacement elements are about $1.

Weldon Corbitt #80-1339

Diode failure: In the 1977 and newer MGB's the electrical system is designed to allow the "Brake Warning Light" to illuminate when the key is in the "start" position. (In this way the driver can be assured the bulb is working.) However, should a diode in the loom fail, the engine will turn over (but not start) when the handbrake lever is pulled up!

Gearshift knob rattle: The 1977 and newer MGB's have a gearshift knob which sometimes rattles loose. Tighten the nut under the knob with a 9/16 open-end wrench until the knob is TIGHT.

U Joint replacement: If only the rear half of the drive shaft is removed to replace the rear U joint, it is imperative that the shaft be reassembled with the proper alignment. The axis of the two fixed ends (yokes) of the drive shaft must be parallel. Failure to align the shaft properly can cause massive vibrations at higher road speeds.

Midget 1500 - Reverse Gear: Ensure that the gear selector is fully in the reverse position before releasing the clutch. The "up and to the right" selection is difficult (not for a RHD Midget!), but a reverse gear replacement can cost $500. If the gears will not mesh when reverse is selected, return to neutral, let out the clutch, depress the clutch, and try again. Engage reverse only when fully stopped!

Midget 1500 - Motor Mounts: The front motor mounts on the 1500 Midget were upgraded in 1976, but lots of 1975 Midgets have the inferior mounts. The failure of the mount allows the engine to slip deeper into the frame. You can usually determine the degree of failure by examining the mounts -- and listening for "klunks" when the engine is started and stopped.

Midget 1500 - Gearbox Mounts: Two of the four rear mounts on the 1500 Midget often fail, causing the gearbox tailshaft to strike the rear mounting bracket on starting, stopping, and often during acceleration. The klunking comes from just under the gear selector (shifter). This situation can be remedied only after the engine/gearbox assy is removed from the Midget.

Clutch Failure: The clutch system n all MG's after 1955 is hydraulic. fhere is no adjustment provided for the system, except pedal free play in the MGA's and early Midgets. Several problems can occur:

1) The pedal feels "floppy" and the gears grind when an attempt is made at engagement. The master cylinder is probably empty. By feeling along the length of the clutch pedal, you can determine if the brake fluid is leaking from the master cylinder. If the pedal is dry, the slave cylinder is probably leaking. Sometimes you can get back on the road by refilling the master cylinder and pumping the pedal quickly for twenty times or so. Of course, the leak must be fixed.

2) The pedal feels fine, as usual, but the gears grind when you attempt engagement. Inspect the master cylinder fluid level. If it is full, the master cylinder needs a rebuild.

3) The pedal, when depressed, results in grinding and gnashing from the clutch. The gears grind when you attempt engagement. The release bearing has probably failed. The engine must be removed.

4) The clutch disengages alright, but slips when accelerating -- the engine rpms climb, but the MG goes no faster. The clutch disc is worn and needs replacement (along with the clutch cover and release bearing). The MGB clutch usually lasts about 50-60,000 miles.

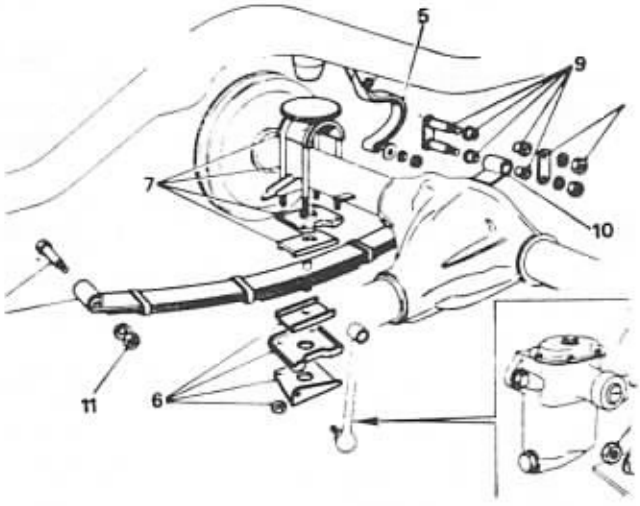
Rear Muffler Placement: Especially on the MG's with bumper overriders, the exhaust's rear muffler must be positioned carefully so the exhaust gasses do not get caught up in the overrider or bumper. Incorrect placement can cause a buildup of black exhaust marks on the bumper or body, or can give the exhaust an incredible "splashing" noise. This is extra-true with the 1974 Midgets with the large black overriders.

MOWOG: This acronym, found on many engine and drive line components comes from the old Nuffield line: MOrris, WOlseley, MG. Now you know!

Steering Wheels: The MG steering wheels continue to get smaller. A wheel of 16½" was used on the MG TC, TD, TF, MGA, and on the MGB until 1969. A wheel of 15½" was used on the MGB from 1970 to 1976, and in 1977 an even smaller wheel of 15" was introduced.

Rear End Shift: The differential works loose from the rear leaf springs and allows a shift of the axle during heavy acceleration or deceleration. To test for this condition in your MG, drive about thirty mph in second gear, and holding the steering wheel straight ahead, accelerate quickly then decelerate quickly (don't use your brakes). If the MG acts as if you'd been steering

slightly in one direction and then the other direction, the differential is loose. Don't simply tighten the U bolts or you may risk snapping them. Remove the U-bolts and clean the threads with a wire brush or a thread chaser (3/8 fine). Then reposition the bolts and snug them down really tightly!



Winter Storage: First ascertain if the storage will be above freezing or below freezing. If the storage is in freezing temperatures, will you have the opportunity and the time to start the MG on a regular basis -- once a month or once every two weeks? These questions pertain to the battery(ies). The batteries will freeze if the specific gravity is too low (the charge too low) and the temperatures are freezing. If the battery freezes, it is beyond repair! If you must store your MG in freezing temps, and you cannot start it on a regular basis, you should remove the batteries.

If you then plan to remove the batteries, first remove the spark plugs and oil the cylinders. A couple tablespoons of oil is sufficient in each cylinder. Replace the plugs and wires. Remove the White/green connection from the ignition coil (to keep the engine from starting) and spin the engine over for five or ten seconds. This will splash oil on the cylinder walls, valves, etc. If you have used too much oil in the cylinder, the engine will refuse to turn over. Don't use more than three tablespoons per cylinder.

The remainder of the tips are for warm or cold storage:

1) Fill the gas tank. The more gasoline in the tank, the less problem you will have with moisture entering the fuel tank. And with petrol prices on the rise, gas in the tank is like money in the bank. A WARNING here: If the gas tank leaks, then store the MG with little gasoline. Fumes from the raw gas can be explosive.

2) Have fresh oil in the engine. And before driving the MG into the garage for the last time, take it out on the road and let it come to normal temp This rids moisture from the engine and exhaust.

3) Clean the MG thoroughly!! It deserves a good cleaning, and it will make the MG you find in the springtime a greater pleasure to drive.

4) Ensuring that all electrics are off (B's with the electric clock should disconnect the battery), cover the MG with a cloth cover. Plastic has been known to lift off huge expanses of paint come springtime! And leave the car cover situated so that a draft can get under the car. The air movement is necessary to keep moisture from collecting. Park the MG away from constant foot traffic -- but if it's in the way, protect its sides with some old,opened, cardboard boxes.

TECHNICAL FEATURES

Proper Use of the Manual Choke by John H Twist #78-415

The manual choke, fitted in the upper right hand corner of the facia on the B and Midget, controls two distinct functions of the SU carburettors. First it speeds up the idle. On some models, one can feel the accelerator pedal being pulled away from the foot as the choke is pulled out. The first third of the travel of the choke cable works the fast idle only. The second two thirds controls the mixture enrichment, as well as the fast idle.

The second function is the mixture enrichment. The colder the engine and surrounding air, the greater the need for more gasoline to be mixed with the air at the carburettor. As the engine warms, the need for a richer mixture lessens.

When starting the MG, always pull the choke completely out (unless the engine is still very warm from recent running). Once the engine has started, the driver must release the choke in small increments as the engine warms. The trick is to release the choke at the proper rate. If released too soon, the engine will cough and spit, especially under acceleration. If released too slowly, the engine will "load up" and run roughly, especially while idling.

By the time the temperat[illegible]

is half way between cold and normal, the choke can usually be released completely. If the choke is left out too long, the extra gasoline can mix with the engine oil by "washing down" the cylinder walls.

If your choke does not seem to be operating correctly, consult your workshop manual for adjustments.

The Wire Families by John H Twist #78-415

Working from a wiring diagram for the 1978 MGB, this listing details the function(s) of each of the wires in the vehicle. Generally, these functions have remained unchanged over the life of the MGB, and are also largely the same as the later MGA's and the MG Midgets.

As a note, for any work with the electrical system, a 12v test light is a must!

The Blacks:

Black: Always ground
Black/green: URP switch to cooling fans

The Browns:

Brown: Always HOT, unfused
Brown/light green: windscreen motor to switch
Brown/yellow: Indicator light to alternator
Brown/purple: Unused

The Whites:

White: HOT with ignition on, unfused
White/black: distributor to coil, coil to tachometer
White/brown: ignition switch relay to fusebox, starter solenoid to solenoid
White/blue: stepped down voltage for distributor amplifier
White/green: Keyswitch to radio, HOT UNFUSED at first key position
White/light green: Solenoid to coil, resistive cable to coil
White/red: Keyswitch to solenoid relay, Solenoid relay to brake warning diode

The Purples:

Purple: Always HOT, fused
urple/black: Horn to horn switch
Purple/green: Key buzzer to time delay buzzer
Purple/pink: Key switch to key buzzer
Purple/white: Courtesy lamp/boot lamp to earthing switches

The Greens:

Green: HOT with Ignition on, fused
Green/black: Fuel tank unit to gauge
Green/blue: Temp sending unit to gauge
Green/brown: Reverse lamp switch to reverse lights, heater fan to switch
Green/orange: Brake pressure switch, handbrake switch, brake warning diode, brake warning light
Green/pink: Service interval counter (EGR light)
Green/purple: Brake light switch to brake lights
Green/red: Left turn signals to switch
Green/white: Right turn signals to switch
Green/yellow: Heater fan circuit

The Reds:

Red: Fusebox to sidemarkers and parking lights.
Red/green: Light switch to fusebox, and to panel rheostat
Red/light green: Wiper motor to switch
Red/white: Panel rheostat to panel lights

The Blues:

Blue: Light switch to dimmer switch
Blue/light green: Wiper motor to switch
Blue/red: Dimmer switch to Low beam
Blue/white: Dimmer switch to high beam/high beam indicator

The Light Greens:

Light green/black: Washer pump to switch
Light green/brown: Flasher to turn signal switch/flasher to hazard switch
Light green/green: Voltage stabilizer to fuel/temp gauge
Light green/purple: Hazard switch to hazard warning lamp

The Slates:

Slate: ON when ignition is off,unfused
Slate/pink: Fuse to anti-run on valve
Slate/yellow: Anti-run on valve to pressure switch

TECHNICAL FEATURES (Con't)

the Yellows:

Yellow: HOT in 3rd/4th, ignition on, unfused

Yellow/brown: Driver's seat belt to time delay buzzer

Yellow/purple: Time delay buzzer to seat belt warning light, overdrive circuit

Yellow/red: Gearbox 2/4 switch to TCSA switch.

Technical Publications by
John H Twist #78-415

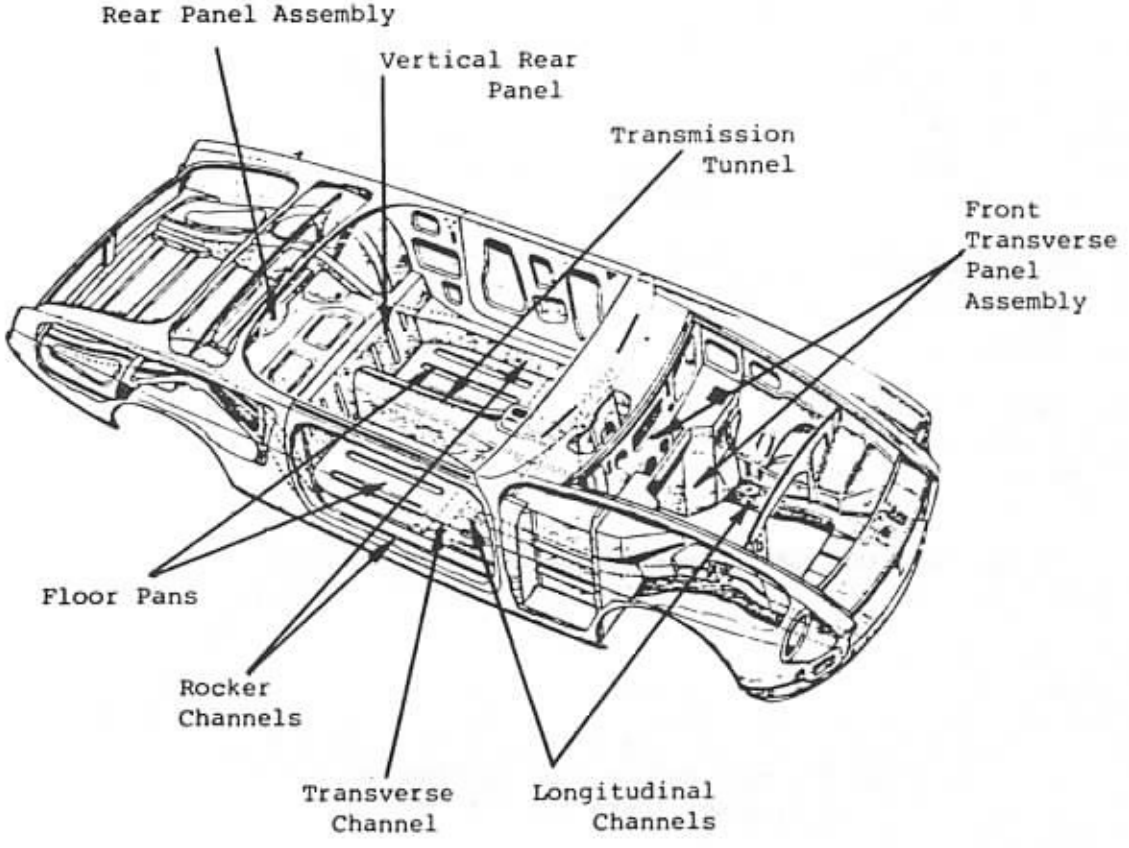
No doubt the following listing of Driver's Handbooks (incomplete!) available for the MGB and MGC in various years, countries, and languages will surprise you by its length. There may be as many as twenty more handbooks which we have not yet been able to find. The Technical Chairman needs your help in developing a listing of the Technical Publications. You will note that the "Nuffield Press" numbers (located on the back page of the handbook) are not as complete as the part number listings. If you have a driver's handbook whose listing here is incomplete, or missing, please jot down the numbers from your driver's handbook and forward them to the Technical Chairman. Sometimes, the driver's handbooks went through a number of printings (AKD3900 was reprinted about ten times) and your Tech Chairman would like to get everything listed, original as well as reprints, for future use.

Part Number(Title)	Year or Model	Language	Nuffield Number
AKD 3700	GHN3/GHD3	German	
AKD 3900B	GHN3	English	29/29 (6231...
AKD 3900J	GHN3 1962-1967	English	29/29 (81542) 3/71 2,003
AKD 4034L	MGB Special Tuning	English	15/ 9 (90275)12/75 9,000
AKD 4109	GHN3/GHD3	Danish	
AKD 4887A	MGC Owners Handbook	English	29/34 (12050) 2/68 3,514
AKD 4887B(English)	MGC	English	29/34 (19750) 1/69 1,665
AKD 4894	MGC	Swedish	
AKD 4958	MGC(w/emission)	English	
AKD 7059 (USA)	MGB 1968-1970	English	29/175(8621)11/67 6,979
AKD 7059 (English)	MGB	English	29/175(80312) 5/70 13,500
AKD 7101	MGB(Austria/Switz)	German	
AKD 7278	MGB GHN4/GHD4	Swedish	
AKD 7417	MGB GHN5/GHD5	Danish	
AKD 7418	MGB GHN5/GHD5	Dutch	
AKD 7419	MGB GHN5/GHD5	French	
AKD 7421	MGB GHN5/GHD5	Italian	
AKD 7571	MGB GHN5/GHD5 W Germany	German	
AKD 7598 (English)	MGB	English	29/29 (82861) 3/72 11,000
AKD 7633	MGB GHN5/GHD5 1971	Dutch	
AKD 7637	MGB GHN5/GHD5 Aus/Swit	German	
AKD 7638	MGB GHN5/GHD5 1971	Spanish	
AKD 7638/1	MGB 1972	Spanish	
AKD 7881 (English)	MGB 1971	English	29/175
AKD 7885	MGB (Supplement)	English	
AKD 7923	MGB (Supplement)	Dutch	
AKD 7938 (English)	MGB 1972	English	29/175(82340)11/71 22,000
AKD 8155 (USA)	MGB 1973	English	29/19 (84074)12/72 12,500
AKD 8160 (Canada)	MGB	English	29/29 (84074)12/72 12,500
AKD 8423	MGB/GT V8	English	
AKD 8638	MGB 1974	English	
AKD 8639 (Canada)	MGB 1974	English	
AKM 3286 (USA)	MGB 1975	English	
AKM 3407 (USA)	MGB 1976	English	29/29 (90428) 1/76 5,500
AKM 3408 (Canada)	MGB	English	29/29 (89356) 9/75 1,300
AKM 3521 (USA)	MGB 1977	English	
AKM 4052 (USA)	MGB 1978	English	29/29 (13187) 1/78 7,017
AKM 4383 (USA)	MGB 1979	English	29/29 (14895) 3/78 11,017
AKM 4391 (USA)	MGB 1980	English	

On Corrosion and the MGB

By Fred Mannering 30-1209

It is common knowledge among MGB owners that the 'B' body is particularly susceptible to rust. The question that will be addressed in this article is: How much corrosion can be sustained before the car becomes unsafe from a structural point of view? The Figure below illustrates several major areas that are vital to the survival of an MGB. The structural significance of these areas and their susceptibility to rust is briefly discussed below. This discussion is oriented toward roadsters (although many GT problems are similar) and is based on recent MG literature, road tests, and personal experience.



Floor Pans - The floor pans serve primarily to support the seats, although some torsional loadings can be transmitted to this area. The pans are quite prone to rusting, particularly in the frontal areas. Corrosion on the floor should be attended to on a regular basis (to make certain that your seats don't fall out to the pavement!), however in all but the most extreme cases (such as extensive rusting in the rear portion of the pan), rust in this area is not overly critical.

Front Transverse Panel Assembly - This area is comprised of a maze of vital structural components. The assembly takes virtually all of the torsional loadings from the front suspension and passes them to the body through the Transmission Tunnel and Rocker Channels. This area is generally one of the last to rust, but any rust sustained here is quite serious.

Longitudinal and Transverse Channels - The most forward portion of the Longitudinal Channels are vital as they support the engine and, along with the inner fender panels, transmit torsional loadings from the front suspension to the Front Transverse Panel Assembly. Corrosion in this forward area is an infrequent occurence.

Suprisingly, the Transverse Channel and the rear portion of the Longitudinal Channels are not as important to the MGB stucture as many owners believe. The primary purpose of these members is to support the floor pans and provide a rear mounting for the transmission. Very few loadings are transferred to these members and, subsequently, a substantial amount of corrosion can be sustained here without serious consequences (but make certain that this rust does not get 'out of hand').

Rocker Channels - The Rocker Channel is composed of three components; 1) the outer panel, 2) the intermediate support panel, and 3) the inner body pannel. It is well known that this area is a real "hot" spot for rust. It is also quite significant stucturally since both torsional and shearing forces are applied here. The most critical component of the Rocker Channel is the inner body panel (the panel connected to the Floor Pans), and as long as this component remains corrosion free, substantial deterioration can be tolerated on the outer panels. Again, rust in this area can be dangerous, particularly if the inner body panel shows signs of corrosion near the Vertical Rear Panel. If this condition exists, the possibility of the car literally breaking in two along the vertical rear panel must be considered.

Transmission Tunnel - This member is extremely important structurally, as a large percentage of the transverse loadings are transmitted through this area. Fortunately, oil and grime on the underbody protect the tunnel from corrosion, and therefore problems don't usually arise in this region.

Rear Panel Assembly and Vertical Rear Panel - These areas transmit rear axle loadings to the remainder of the body, and such areas are generally not major rust spots. However corrosion here can signal serious structural problems.

In general, the MGB is grossly overdesigned structurally and, as a consequence, can tolerate a considerable amount of corrosion without serious structural deficiencies. The GT, by virtue of its fixed top, is even more durable, and the "breaking in two" phenomenon is virtually non-existent. However, it is essential to recognize structural problems as soon as possible. As a rule, two characteristics may indicate structural problems; 1) the doors become misaligned and difficult to close and 2) the rear portion of the Longitudinal Channels deform when jacking the car from this area. If your car has these symptoms there may not be reason to panic, but there is good reason to keep a careful eye on the stuctural areas mentioned in this article.

To illustrate an MGB with the "door" and "jacking" symptoms, I present one of my MGB's (GHN3L99052, model year 1967, built in September 1966). This car was purchased in 1976 for $200 and, as the picture indicates, it has sustained considerable corrosion damage. The fenders and outer rocker panels have completely disintegrated and aluminium sheets have been applied to protect the inner structural members from the elements. Although the car has been noticeably weakened by corrosion, many key structural members are still intact and the car remains "usable".