

THE OCTAGON NEWS

Volume XXXVIII No. 5

March 2004

More New Members!
SU Fuel Pumps

From the President

Sam Hodges

I wish to start off this month by pointing out that last month's column was nothing more than a tissue of lies! Although it was a very fine weaving of Cottonelle, Charmin and a cheaper generic brand, it was still nothing more than the ramblings of the aspiring, power hungry, but oh, so underappreciated newsletter editor, Steve Markman! I DID in fact submit a column to the newsletter editor! (*The fact that it was submitted the Tuesday after the Wednesday deadline is a whole other story! But I did actually write one!*)

Anywho... It's that time again! Time to start polishing up the cars, time to get the cat hair off the car covers (*of all the places to sleep, why that cat of mine likes the top of the MG I'll never know*), time to clean the mouse-house out of the air cleaner (*a true story that happened to El Presidente' back in '97*). A great time to do some of this will be at the upcoming MGCC Tune-up Clinic. Currently, this event is scheduled for April 17, 2004, at MG Automotive.

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Southwestern Ohio Centre of the MG Car Club

Club Membership Information

Membership dues of the Southwestern Ohio Centre of the MG Car Club are eighteen (\$18.00) per year, payable during September and October. On January 1st. the names of delinquent members are removed from the roster. See Linda Wolfe for further membership information.

MG Car Club Monthly Meeting

The Southwestern Ohio Centre of the MG Car Club meets on the fourth Wednesday of each month at the K of C Hall, downtown Dayton, on Bainbridge Street, at 8:00pm. The next meeting will be:

Wed March 24, 2004

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Upcoming Events

Mar:

24 – Meeting (K of C Hall)

Apr:

2 - Fish Fry (K of C hall)

28 – Meeting (K of C Hall)

May:

02 – British Car Day (Healey Meet)
Northern Ohio

16 – BCD XX, Easton, Columbus

22 – 30 – Drive your British Car Week

23 – Spring Tour

26 – Meeting (K of C Hall)

Jun:

06 – BCD – Ft. Meigs, Toledo

23 – Meeting (K of C Hall)

24 - 27 – MG2004, Parsippany NJ

Jul:

12-16 - NEMGTR GOF Central XXVI,
Fairborn Holiday Inn & Dayton area

14 – 18 – NAMGAR GT29 – Cromwell CT

28 – Meeting (K of C Hall)

31 – All Ohio MG Picnic – Central Ohio

Aug:

07 – BCD, Dayton Metro Parks

12 - 15 – University Motors Summer
Party, Grand Rapids, MI

22 – Picnic at Dick Goodman's home

25 – Meeting (K of C Hall)

Anyone showing up before 9:00 a.m. will of course be shot. Well, no, first, you'll be beaten, then you'll be shot. Steve Miller has graciously agreed to allow us the use of his facility, as long as we don't leave any oil stains on the floor! (*Like that's gonna happen! If that were really the case, then could any of us actually attend? I know I couldn't...*)

After we get our cars tuned up, we can take them to the **First British Car Meet at the Market**. This event has been scheduled for May 22, 2004. This event is sponsored by the British Museum of Transportation and the 2nd Street Public Market in downtown Dayton, Ohio. The show starts at 8:00 a.m. and runs until the last person's standing! Actually, I think that they'd like for it to end around 3:00 p.m. but what do I know. For information on ticket prices and registration information, please see the Museums website at <http://www.members.aol.com/britcarmuseum/index.html>. Click the "Events" tab to find out more.

The next day, we can all take our nicely cleaned cars and flog the bejebbies out of them on the Spring Tour. Bring LOTS of spare parts! The McCann Clan has a Spring Tour already planned for us. I'm not sure of all the details, but they did say something about lots and lots of covered bridges! Just kidding – I really don't know what's planned, but they did say that it would be centered around the Bellefontaine area. (*The covered bridge thing is my own personal fiction*). The date for this has been tentatively carved in stone for May 23, 2004, more details to follow.

And if that's not enough for all of you little British car nuts, then the following week is the 8th Annual Drive Your British Car to Work Week. Plan on being the dapper man (or woman) about town in your sleek, elegant British car. (*It is here that I must confess my jealousy of the Jag and Rolls Coupe and/or Sedan owners...*) If however you drive like me, you'll be lucky if your car is still running at the end of the Spring Tour. I'm personally hoping that it'll be another points paying event where I can rack up a grossly stupefying

number of penalty points. You know my motto, well actually, none of you should know this motto seeing as how I'm making it up right now, "...if you can't win, then be the biggest loser possible!" (...wait a minute..., that didn't come out just right...)

The next BCD meeting has been scheduled for March 16th at Poelking Lanes South. Plan on attending if you want to see how things are really done! I liken it to seeing how sausage is made. Not always the prettiest thing to watch, but the finished product is always guaranteed to be so very tasty. *Ahhh! Sausage! Ahhhhhh! ...SIKsdfhs sgnsgsdgh JS:9nbpdouskdvln; 98uoeaqh,...* Sorry about that, the drool shorted out my keyboard. How did I get onto sausage in a column about British cars?!?!

Mark your calendars! I hope to see as many of you as possible at as many events as you can possibly attend.

Welcome to our Newest Members!

Steve & Mary Emerson 3970 Sintz Road Springfield, Oh 45504 (937) 408-2990 SMEmerison@msn.com (actively looking for an MGB GT)	Robert & Marilyn Kraft 6780 S. Karns West Milton, Oh 45383 (937) 698-6221 1951 MG TD	John & Lee Lundberg 1130 White Oak Dr. Springfield, Oh 45504 (937) 325-2863 johnlundberg@surfbest.net 1979 MGB
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New Member Profile...Steve Emerson

By Carole Looft

At our February meeting, we welcomed several new members to our club. One of those new members was Steve Emerson. Steve is the owner of Sporty Car Garage in Springfield and accompanied Jim and Joanna Cooley to the meeting.

Steve is presently doing the restoration work on the Cooley's TC. He has been around British cars his whole life – he is originally from England and has been in the States for several years, now.

Steve, his wife Mary, and daughter Amelia are not MG owners... yet. They've been keeping their eye out for a good MGB GT. Steve likes the drive-ability of the MGB and feels it's a quality built car. Steve has extended a welcome to our members to come see his shop and get a first hand look at this operation. Welcome to our club, Steve, Mary and Amelia!



2004 BMTA Conference

Rick Cutright

I just got back from Santa Barbara where I attended the 2nd annual British Motor Trade Association Conference. This is a fledgling group of manufacturers, vendors, garages, and restoration shops that want to enhance the LBC experience. The intention is to provide a method of informing British car owners which establishments are recognized as reliable and quality minded. As this is our second meeting much work has yet to be done and I am excited about the prospects.

Our weekend began with a tour of Moss Motors, where we observed their customer service department and their shipping and warehousing operation. After that, we took a tour of Moss' upholstery and carpet shop along with their light manufacturing facility. Jeff Zorn of Little British Car Co. attended and provides a nice set of photos and narration on his website, www.lbcarco.com. You need to read about his test ride in the Moss MGA supercharged test car.

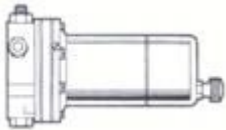
The basic message of this conference was that these cars are for fun and need to be driven to be enjoyed. The BMTA will work to make sure quality parts are always available. To read more about the BMTA, visit www.britcar.org.

SU Fuel Pumps 101

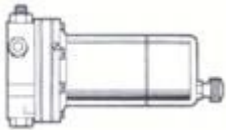
By Dave DuBois

First of all, a brief history of the SU Fuel pump. As you all know, SU stands for Skinners Union and was the brainchild of George and Carl Skinner. George, in spite of taking over his father's business, Lilly & Skinner footwear distributors, had a better idea for a carburetor in the early automotive days. In addition to building the well known and much loved SU carburetors, they also went into the fuel pump business. They started in the 1932/33 time with the L, low pressure pumps. Approximately 1939, they developed the HP, LCS and Dual pumps and in 1942 they even came up with fuel injection pumps (I wonder if those also go tic, tic, tic?). In 1958 they came up with another "High pressure pump" (this may be the AUF 300 series pumps found in the later MGBs). For a more in depth history of SU, go to Burlen Fuel's history of SU at <http://www.burlen.co.uk/su.htm>.

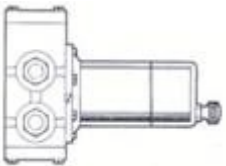
Some of the more common SU pumps that those of us with MGs can run into, along with their pressure and flow rate are as follows:



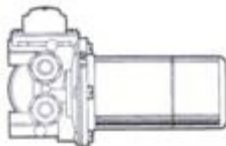
L (low pressure pumps). These are found on the T series (TA, TB, TC, TD and early TF) and earlier MGs. They develop up to 1.5psi and have a flow rate of 1.3 pints per minute (9.6 gallon per hour)



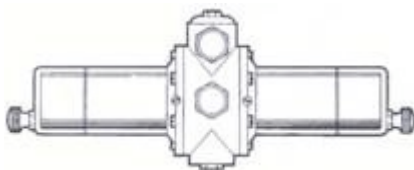
HP (high pressure pumps). These are found on late TF, MGA, Z Magnette and early MGBs. They are the same outline and size as the Low Pressure pumps or sometimes come with a longer coil housing (referred to as a High Pressure/Long Body pump). They develop up to 2.7psi and have a flow rate of 1.1 pints per minute (8.4 gallons per hour).



LCS pumps. These were used on the MGA Twin Cam and on the Austin Healey. They use the long coil body of the High Pressure/Long Body pump and have a large, rectangular pump body on them. They develop up to 3.8psi and have a flow rate of 2 pints per minute (15 gallons per hour).



AUF 300 series (now AZX 1300 series) pumps. These are found on all of the later MGBs plus many other British cars of the mid 1960s and later. They have, what is called a "plain air bottle on the inlet side and a flow-smoothing device on the delivery side". They develop up to 2.7psi (AZX 1307) or 3.8psi (AZX 1308) and a flow rate of 2.4 pints per minute (18 gallons per hour) for both types.



Various configurations of Dual Or Double Ended pumps including L, HP, AZX 1400 series and AZX 1500 series. Some of these operate both ends simultaneously and some operate just one end, keeping the other end as a reserve. The pressures and flow rates for these pumps are as follows:

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- L (both ends working simultaneously) 1.5psi, 3.2 pints per minute (24 gallons per hour)
- HP (both ends working simultaneously) 2.7psi, 2.6 pints per minute (19.2 gallons per hour)
- AZX 1400 series (both ends working simultaneously) 2.7 or 3.8psi, 4.8 pints per minute (36 gallons per hour)
- AZX 1500 series (one end working at a time) 3.8psi, 2 pints per minute (15 gallons per hour)

The SU fuel pump is an impulse type of pump. That is, when power is supplied to the pump, current flows through the points and the solenoid coil. The energized coil acts on the iron disk attached to the diaphragm, pulling it and the diaphragm toward the coil. This movement of the diaphragm develops a vacuum in the pump body, which pulls fuel from the tank, through a check valve and into the body. The movement of the diaphragm also causes a shaft that is attached between it and the lower points bridge or carrier to push the carrier up, making the carrier to “throw over” and open the points. Once the points open, the flow of current through the coil is interrupted, allowing the diaphragm to be pushed back to its original position by the volute spring, which in turn pushes the fuel in the pump body out through another check valve to the carburetors. Once the diaphragm reaches its original position, the points carrier “throws over” to the points closed position and the whole action is repeated – thus the familiar tic, tic, tic sound of the pump. The pump pressure is established by the strength of the volute spring which resides between the iron disk on top of the diaphragm and the bottom of the coil. The check valves can be either a simple brass disk that held against the valve seat by combination of gravity and back pressure in the system in the case of the L, HP and LCS pumps or a plastic sheet in a valve assembly that closes against the assembly’s valve seat and is held against the seat by system pressure in the case of the later AUF 300 and AZX 1300 series pumps. In both cases, the system pressure is developed on the carburetor or outlet side of the pump, so the valves act as check valves to keep fuel from flowing back to the tank.

As with anything that uses a set of points opening and closing, there is point wear, both mechanical (slight) and electrical arcing (major) that eventually causes operation to deteriorate and eventually stop all together. Over the years, various methods were employed to suppress the electrical arcing at the points. Originally, on the L type pumps, the only suppressor used was a swamping resistor, in the form of resistance wire wrapped around the coil and attached in parallel with it. As stronger coils that draw more current were employed, a 0.47 microfarad capacitor was added to assist the swamping resistor suppress the arcing (by the way, even though it looks like an electrolytic capacitor, it is not and therefore is not polarity sensitive). With the introduction of the AUF 300 and AZX series pumps, the capacitor was replaced with a diode to work in conjunction the swamping resistor. This arrangement made the pumps polarity sensitive. All of the systems of arch suppression worked fairly well with the series of pumps they were designed for, giving the pumps a reasonable life expectancy (except the expectancy of the owners). Finally, the all electronic pumps were introduced, which replaced the points with a Hall effect circuit to control the current flow in the coil. These pumps look and operate the same as the points style pumps, complete with the familiar tic, tic, tic sound, but there is no longer any problem with point wear and the life expectancy of the pumps is now established by the life of the diaphragm and check valves.

The following are some of the more common problems with SU fuel pumps:

1. Burned and/or sticking points – usually causes intermittent fuel starvation and stalling. When this happens, the silence is deafening with the normal tic, tic, tic sound missing. A sharp rap on the side of the coil housing will sometimes bring the pump back to life, but the long term solution is replacement of the points.
2. Diaphragm stiffens with age – this will usually cause the pump to run slowly or erratically. The only solution for this is to replace the diaphragm.

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3. Leakage past valves – pump will seem to run at normal or faster rate, but no fuel is pumped, a vacuum gauge on the input to the pump will bounce up and down in time with fuel pump clicking. On the L or HP pumps, this will necessitate new valve disks and/or re-facing the valve seats. On the AUF 300 or AZX 1300 series, one or both of the valve assemblies will have to be replaced.
4. Broken pedestal (bakelite platform under the end cap where the points mount) – this is usually a problem only on the L and HP type pumps where the pedestal is not supported around the mounting screws, and then usually a owner induced failure by over tightening the mounting screws. This condition will stop the pump completely and is corrected with a new pedestal.
5. Fuel leak – caused by loose coil housing to body screws, loose inlet/outlet fittings, split diaphragm or cracked pump body. A cracked pump body is a very unusual situation and with the price of new bodies, the best solution is a new pump. A split diaphragm requires replacement of the diaphragm while loose screws or fittings just requires tightening. It is a good idea to use some sealing compound on fitting threads and lock washers on screws.
6. Air leak – This will usually show up as fuel starvation at higher speeds. To check for this situation, disconnect the fuel line from the last carburetor in line and route it into a jar. Turn on the ignition and as the jar fills above the end of the line, watch for a stream of bubbles. The fix is the same as the above, plus checking the lines and fittings between the pump and the fuel tank.
7. Clogged lines – this can happen before or after the pump. Disconnect the line from the pump to the carburetors and replace it with a line into a jar or can, then turn on the ignition and see if fuel is pumped out of the pump. If so, the output line is clogged. If no fuel is pumped out, disconnect the line from the tank at the pump and turn on the ignition. If the pump runs, the line from the tank is clogged. Note: since a clogged input line will cause the pump to fail in a current on condition, leaving the ignition on for a long period of time in this condition will cause the swamping resistor wire to burn out, which will, in turn, cause excessive arching at the points and a reduced points life. If the pump is an all electronic pump this situation can result in a burned out circuit board which gets into many \$\$\$.

Instructions on repair, reassembly and adjustments of the pumps can be found in the shop manual or the Haynes manual for all of the cars. The information on the fuel pumps for the TD is in Section B.2 of the shop manual and section D.3 of the shop manual for the MGB (pre 74). In the Haynes manual for the MGBs it is in Chapter 3 sections 4 through 11. For all the other models, you will have to search your manuals for the information since I don't have the manuals for them. Repair parts for the pumps can be purchased through Moss Motors (<http://www.mossmotors.com/>), Victoria British (<http://www.victoriabritish.com/>), or directly from Burlen Fuel (<http://www.burlen.co.uk/>)

In parting, if you get stuck on your SU fuel pump, or you don't feel comfortable digging into them yourself, I offer a SU fuel pump restoration service. I completely restore the pumps and convert them to solid state (I use a different method than Burlen Fuel does for the all electronic pumps, but the end result is the same). For information on my services, contact me at ddubois@sinclair.net and I will send you a write up.

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Editor's note – Thanks again to Dave DuBois of Bremerton, Washington, for providing another one of his great technical articles!

Minutes Report February 25, 2004 Meeting

8:02pm Meeting called to order by El Presidente and the usual popular call for Beer Break followed.

President's Report – El P. read an email from Dave Gribler that thanked the membership for attending their annual dinner party. A special Thank You was made to the Hookers for the evenings entertainment. The newest members were shocked when this was read.

Vice President's report – No report submitted at this time.

Minutes – The minutes to the previous month's meeting were reluctantly approved. (Hey, its not easy being a relatively new guy trying to glean facts from the low level anarchy we call a meeting!)

Treasurer's Report – Steve Veris reported an account balance of \$3134.25 at the end of January 2004.

Membership Report – Carole Looft reports the club now has 92 paid members. New members include Steve Emerson (who is restoring Jim Cooley's TC), Bob Kraft ('51 TD), Richard Haas (MGA).

Sunshine Committee - Linda Wolfe reports that Jennifer Peterson's mother passed away. Very audible sympathy was expressed by the entire membership. Reuben Wasserman thanked everyone for their support while he was being observed. Note must be made that Rueben had a series of ailments that were quite serious but he appears in good health now.

Activities – Spring Tune-up is scheduled for April 17, 9am at Steve Miller's MG Automotive. May 22 marks the beginning of British Car Week and will kick off with a gathering of British motorcars at the 2nd Street Market for a show sponsored by the British Museum of Transportation. The Spring Tour will be put on by Dave McCann. This is tentatively scheduled for May 23, unless it rains that day in which case it will be rescheduled for May 16. No, really! That's what I heard.

Beer Break – called at 8:28pm, meeting reconvenes at 8:42pm.

Activities, continued – Mention was made of the Vintage Grand Prix June 18-20 at Mid-Ohio. Among the many meets upcoming is the 20th Anniversary Marques on the Green in Louisville June 5. MG will be the featured marque. The last Fish Fry went well so a list of volunteers was made for the next Fish Fry April 2. Kudos were given to Dick and Barb Smith for the February Pub Run. This year's BCD is chaired by Steve Seto of the Triumph Club (no, Sam, its not like the Baby Seal Club). Various committees were formed with chairs appointed.

New Business – El Presidente thanked the gracious Gribblers for the lovely party that all agreed was a rousing success. Bill Hammond thanked Barb Smith for organizing the Cold Beer & Cheeseburgers Pub Run. Dick Goodman wanted a date picked for the annual MGCCSWOC Picnic, the date set is August 22. An issue was presented regarding what may be advertised in the newsletter. It was agreed that ads should be car related only, and I'm sure that excludes most garage sale ads with the obvious exception of the Loofts.

Tech Tips – Sam says "sand before painting".

Not For Sale – Bill Hammond's rare MGC GT. It's sold. Stop calling!

Gumball – won by Sam, Sam declines. Dick Smith wins and doesn't have a problem with it.

Meeting Adjourned – 9:11pm

Classifieds -

Complete '75 MG Midget rubber bumper in near excellent shape. Excellent interiors, good rust free body & fenders, excellent hood. Needs convertible top but good rails. 1500cc engine has blown rod. Comes with complete 1275cc engine and transmission with newly rebuilt carbs. Seller was going to convert it but lost interest. Currently asking \$500.00! For more information, contact John Howard @ 513-312-8799 (Bethel, Ohio)

1979 MG Midget, excellent condition, no rust, 36,000 miles, Inca yellow, black top and bumpers, Weber carburetor, new tires and top, garaged last 16 years, driven only sporadically last 12 months. \$7,500, 937-566-6532.

1971 MG Midget, engine rebuilt at 80,000 miles, 180 miles on rebuilt engine. New top, no rust, complete going over in 2002. Good rubber, good interior, possible trans problem (2nd gear), \$4,000 OBO, (419) 683-1726. Ask for Joe.

1967 MGB GT HARDTOP, new dark green paint, new upholstery, new brakes, new front end, \$6500, call Joe Antrim, 937-277-4798.

Looking for AMCO style luggage rack for MGTD. Call Ron Froess, 814-899-5076, or write at 2313 Saltman Rd., Erie PA 16510.