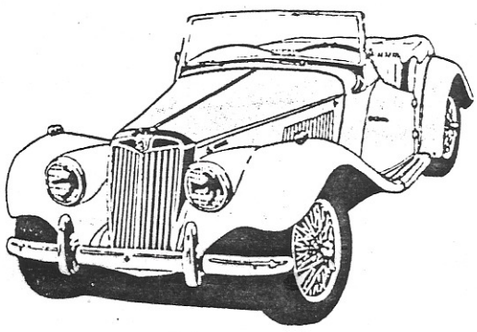
WYERS & TYERS



1987 DUES ARE DUE NOW!

MARCH, 1987

GENERAL MEMBERSHIP MEETING: Monday, March 9, 1987
7:00 P.M.
PANCHO'S RESTAURANT - Cloverleaf Shopping Center, Summer Ave. & I-240

For a sneak preview of the upcoming April Fool's Rally, be sure to be at the general meeting. Skip Padgett and George Callow have made a video of the rally route and this you wouldn't want to miss.

VARIETY CLUB BAR-B-QUE: Many, Many THANKS to John Jones and his crew from the Variety Club for the appreciation night they prepared for us. The appreciation as you all know was for the super $11,000.00 we donated to the Variety Children Services.

MEMBERSHIP TIME; Renewal time is about up. Please, please do this immediately if you have not. Do take time to fill out the suggestions. If you need an application, see George Petech at the general meeting.

TR RALLY: In keeping with the club's tradition, the February Rally will be held in March. You should have received a flier from your Triumph leader Gary Brazelton giving you all the details. Chances are the date of March 1 the day of the rally will be close to the time you receive this newsletter. In order for you to receive advance notice, Gary mailed fliers. Do come on out for a fun-filled afternoon. Call Gary at 458-9224 for more information.

MG RALLY: April 5 is the date set for the annual APRIL FOOLS RALLY. The MG Marque has promised that this will be THE EVENT the Healey, Jag and Triumph Marques will want to top in '87. Marque your calendar now for Sunday, April 5, 1:00 P.M. (Meeting place to be announced). Call Skip or Vicki Padgett at 755-9010 for more foolish information.

CLUB LOGO: The floor is open to entries for a new club logo. One has been submitted but we need more. Come on all you artist.

KIND WORDS and lots of praise have come to us from many who received the commemorative program. The note from the Finches made me feel good - I know it will you too.

***NATCHEZ'87
ENGLISH MOTORING CLUB TOURIST TROPHY RALLYE-
MAY 8&9, 1987
EOLA GUEST HOUSE

MORE TO FOLLOW!!!!!!

January 21, 1987

Dear Mr. McGuinter,

We want to thank you for the commemorative issue of "Wyers & Tyres". This is a nice finish to a very nice car show.

We have our car stored for now because of the snow and salt on the roads, but we are looking forward to more driving and more car shows this year.

Sincerely,
George & Charline Finch

Decatur, Tex.

***AUSTIN HEALEY ROUNDUP - APRIL 24-26
LAKE JAM, RAYBURN, TEXAS / EIGHTY HEALEYS LAST YR., MORE THIS YR. CALL CRAIG HOUSE (601)469-3279.

'SBF' - SILICONE BRAKE FLUID

By
John Bambers

"Don't expect to see SBF produced by the major brake parts manufacturers in the near future . . . expanded use of this material will reduce their parts replacement business to near zero."

If you are planning to overhaul the brakes on your MG this winter, here's a bit of history on the fluid that makes them work!

In 1924 Chrysler introduced hydraulic brakes to the automotive industry, and for the first time, because hydraulic principles were used to accomplish equal braking at the wheels, front brakes became practical. Henry Ford resisted this idea because he felt that, even though the other cars could stop quicker and straigher, his mechanical linkage would not fail. You see, the major drawback to hydraulic brakes is simply this: *No Fluid — No Brakes!*

In 1924 the only seals available were leather or natural rubber, and because leather was unthinkably undependable, natural rubber had to be used. As an hydraulic fluid, water could not be used because it froze and boiled easily and corroded parts quickly. Mineral oils, like engine oils and transmission fluids, could not be used because they quickly destroyed natural rubber. So this left only alcohol, and since that time all brake fluids, until 1974, were further developments of alcohol, or glycol, as it is technically referred to now. Glycols have some serious deficiencies though; most notably, they are hygroscopic. They absorb water at an alarming rate, drawing most of it from the atmosphere right through the rubber hoses and seals! In coastal areas, and areas where salt is used to remove ice from the road, highly corrosive dissolved salts are absorbed in the same way. This absorption process starts at the time of fluid manufacture and continues until after the car is scrapped. Anytime the moisture content is over three per cent, the corrosion inhibitors are overwhelmed and serious trouble occurs. This can happen in as little as eight to ten months in some areas. Several years ago, in upstate New York, a survey of cars up to 13 years old showed that those three years old had the most water in their systems — an average of 7.1 per cent. Thereafter, the moisture content was around four per cent. The mystery of why older cars had less water was solved when it was realized that after the corrosion and subsequent leaks developed, the system was continually being topped up, thus holding down the moisture content.

These four major factors affect the rate at which water will be absorbed by the brake fluid:

1) *The degree of humidity.* A dark, damp, littered area will have a higher humidity than a bright, sunlit area. A coastal area will have a higher humidity than an inland area.

2) *The passage of time, especially vehicle inactivity time.* A car in motion heats up from the engine and from the action of the tires and brakes, and thus lowers the humidity around the car. Also the hydraulic pistons are moving, thereby dispersing the water contamination.

3) *The care with which the fluid is manufactured and stored.* Is the cap tight?

4) *The integrity of the brake system itself.* Are the brake hoses without cracks and the cylinder seals tight?

So, even though no one wanted water as a brake fluid, we have had it anyway!

The first standards for brake fluids were established by the Society of Automotive Engineers in 1946, and these were officially recognized throughout the world until 1972. SAE specs seldom appear on fluid anymore, but if they do, they are obsolete and meaningless. In 1972 the Department of Transportation took over the regulation of brake fluids as well as many other things related to transportation safety. Brake fluid is covered by the Federal Motor Vehicle Safety Standard 116 with more than 29 pages of regulations. Specification 116 covers DOT 3, DOT 4, and DOT 5 brake fluids and hydraulic system mineral oils.

DOT 3: This fluid is the standard of the world. It is glycol, an active chemical (proof is that is destroys paint on contact). It is hygroscopic, causes corrosion, and its boiling temperature diminishes with the absorption of water.

DOT 4: This fluid is totally compatible with DOT 3, and its only significant difference with DOT 3 fluid is that it has an initially 50 degree F. higher boiling point.

DOT 5: This could be any fluid which meets the new standard for DOT 5 fluids, but at this time only Silicone fluids can meet these requirements. It is chemically inert, cannot harm paint, has a consistently high boiling point (about 750 degrees F., which is higher than any rubber compound can withstand), will not absorb moisture (therefore, cannot cause corrosion), and is a natural rubber preservative. DOT fluids must also be compatible with existing fluids and systems. It became a legal fluid on October 1, 1974.

Specification 116 also covers the testing and analyzing of the fluids and the packaging and labeling requirements.

While the United States Army experiences over 15 per cent moisture contamination in two years in the Panama Canal Zone, they experience nearly zero contamination by moisture in Yuma, Arizona. In Panama, they routinely overhaul military vehicle brakes every six months because of this corrosion. We might not now have Silicone Brake Fluid were it not for the Army wishing to have more dependable brakes on military vehicles. Initially, three companies were involved in the development of Silicone Brake Fluid: General Electric, Dow Corning and Union Carbide. Union Carbide dropped out rather early and now all Silicone Brake Fluid originates with either General Electric or Dow Corning.

People trust their brake fluid, but conventional fluid has been a 55-year-old mistake. Of all the world's hydraulic systems, only automotive brakes use glycol. The first 20 years can be forgiven, but after World War II, new rubber technology would have permitted the use of mineral oil. (Have you ever seen corrosion in an automatic transmission?) If it were compatible with rubber, WD 40

would be a better brake fluid than those we have been using. We have been locked into the use of this unsuitable fluid by industry standards, tradition, and, ultimately, government regulations.

Citroen (France) was the first to break new ground. In 1966, for their European versions, they used mineral oil and solved their hydraulic corrosion and sludge problems, and at the same time offered it to Rolls Royce. While Rolls bought the rights to use certain features of Citroen's braking system, they rejected the fluid. Fourteen years later, they finally took it. See how hard old ideas die? In this coundry, most Citroen owners use automatic transmission fluid with perfect success. Rolls has looked at Silicone fluid and has admitted it is a better fluid than theirs, but rejected it because they felt it was not universally available. Certainly it is more available than Citroen's mineral oil.

How To Use Silicone Brake Fluid

Enough about history, tradition, and company bureaucracy. Now for the details about using silicone.

The ideal time to use SBF is on the manufacturer's assembly line. When the SAE extensively tested SBF in the mid-70's, they used three different methods of incorporating SBF in the brake system:

(1) Deliberate contamination with SBF. A system topped up with SBF will be an improved system if for no other reason that it prevents absorption of atmospheric moisture at the master cylinder.

(2) Flush/Fill. Push the old fluid out with SBF. Tests showed that even though clear SBF emerged from the bleed ports, there was still some 30% original fluid in the system. Examination showed that although corrosion took place, it tends to take the form of surface staining rather than pitting, a definite advantage. If you use the flush/fill method, use as high a pressure as possible to get a sweeping effect of fast moving fluid.

(3) Complete tear down and rebuild. There will always be some residual fluid lurking in the pores of the iron castings and other places. Don't despair. It won't be enough to matter.

(4) The method which I advocate is next best to (3) above. It's a method which I developed after much trial and evaluation.

Remove the bleed screws from the wheels. Pump the pedal until the system is empty (It won't be dry); remove the master cylinder and dismantle it. Wash it with water and blow dry (water and conventional brake fluid get along fine). The condition of the master cylinder will pretty well be representative of the condition of the whole system. Connect a source of compressed air (about 100-125 psi) to the pipes which were removed from the master cylinder. Blow until no fluid can be detected on a finger tip when held close to the bleed ports. It may take 10 to 20 minutes of blowing. Examination of the master cylinder will determine if it should be reassembled with existing parts, overhauled, or replaced in its entirety.

Reinstall the master cylinder, fill with SBF, and bleed in the usual manner. I recommend the use of a bottle and hose at the bleed ports to catch the fluid bled from the system. The bottle may reveal many minute bubbles. In a dry system, the fluid may aerate when it passes pipe junctions. Any contaminates left in the system will settle to the bottom of the bottle, leaving reuseable SBF at the top. The amount of residue at the bottom of the bottle is a rather accurate indication of how well you cleaned out the system.

Futile Efforts to Keep Out Moisture

Instead of attacking the problem of the unsuitable fluid, manufacturers have gone to extreme means to keep atmospheric moisture out of the fluid. Instead of the master cylinder mounted low, it is now high. Heat from the engine lowers the humidity in its vicinity. Instead of a screw-in plug vented to the atmosphere, there is now a bladder separating the fluid from the air. To minimize electrolytic corrosion, caliper pistons are chrome plated or made of plastic. Rear cylinder pistons are either anodized aluminum or sintered iron. The cylinder boots have metal reinforcements fitting to a machined surface of the cylinder instead of a rough cast surface. But little has been done to educate the mechanic. Numerous articles about brakes bear out this writer's contention that there is rampant ignorance on the subject of brake fluid.

Automotive engineers would like brake fluid to have a minimum boiling point of 400 F, be unaffected by any ambient condition, be inert and thermally stable, and be non corrosive and friendly to paint. While glycol is none of these things, SBF meets all of these conditions with plenty of room to spare.

Don't expect to see SBF produced by the major brake parts manufacturers in the near future, however, because expanded use of this material will reduce their parts replacement business to near zero. Only public demand or government regulation will cause SBF or mineral oil to be universally used.

SBF works equally well in hydraulic clutches. It is not worthwhile to convert SBF in other hydraulic systems where mineral oil is used. Its only advantage over mineral oil is that SBF will not burn.

If You Insist on Using Glycol Fluid

If you are still not convinced about the merits of SBF, follow these recommendations for glycol fluid: Buy any brand at any price as all must meet government standards. Reject any container which is rusty, or has fluid between the cap and inner seal. Do not store open cans. Change fluid often — more often in areas of high humidity. Whenever the fluid being bled out is darker than the new fluid going in, it is an indication that corrosion is taking place.

In Summary

If you enjoy the problems of sludge and corrosion in your brake system, if you enjoy the excitement of no brakes because of boiling brake fluid, and you want more of these problems, all you have to do is add water to the brake fluid, because this is happening anyway, and you can't stop it. If you *don't* like these problems, you have only two alternatives:

(1) Periodically change the brake fluid (at least every two years and oftener in areas of high humidity), or,

(2) Change for the last time to the forever fluid, Silione Brake Fluid.

CAUTION: Liquid glycol fluid will damage paint almost instantly, but I have never know fluid vapor to damage paint. If liquid glycol gets on the paint, rinse it with a large amount of low pressure water immediately, but do not touch or rub it with anything. The solvents will evaporate out of the paint in several hours, and the paint will again lay down. Its appearance can be restored with a small amount of finishing compound.

GOTS: '73 TR6, white with blue interior. Asking $2400. Call John Jones at 755-7020 if interested.

GOT & FREE: David Wilcox has a block and crank out of a TR4. Has damage but you can have it if you will go get it. Call David at 685-7174.

TRIVIA QUIZ: 1933 marked the first official entry of a British team in this prestigious yearly event.

1. What was the event?
2. What marque was entered?
3. What type cars?
4. How many cars?
5. In what division entered
6. How did they place?
7. Who was the two man team of each car?

The answers remain sealed in a mayonnaise jar to be opened at half passed eight on March 9 at the general meeting by Brilliant Budgy. Come to find out who this intelligent person is.

Nina & Janis
346-7923 & 274-2952