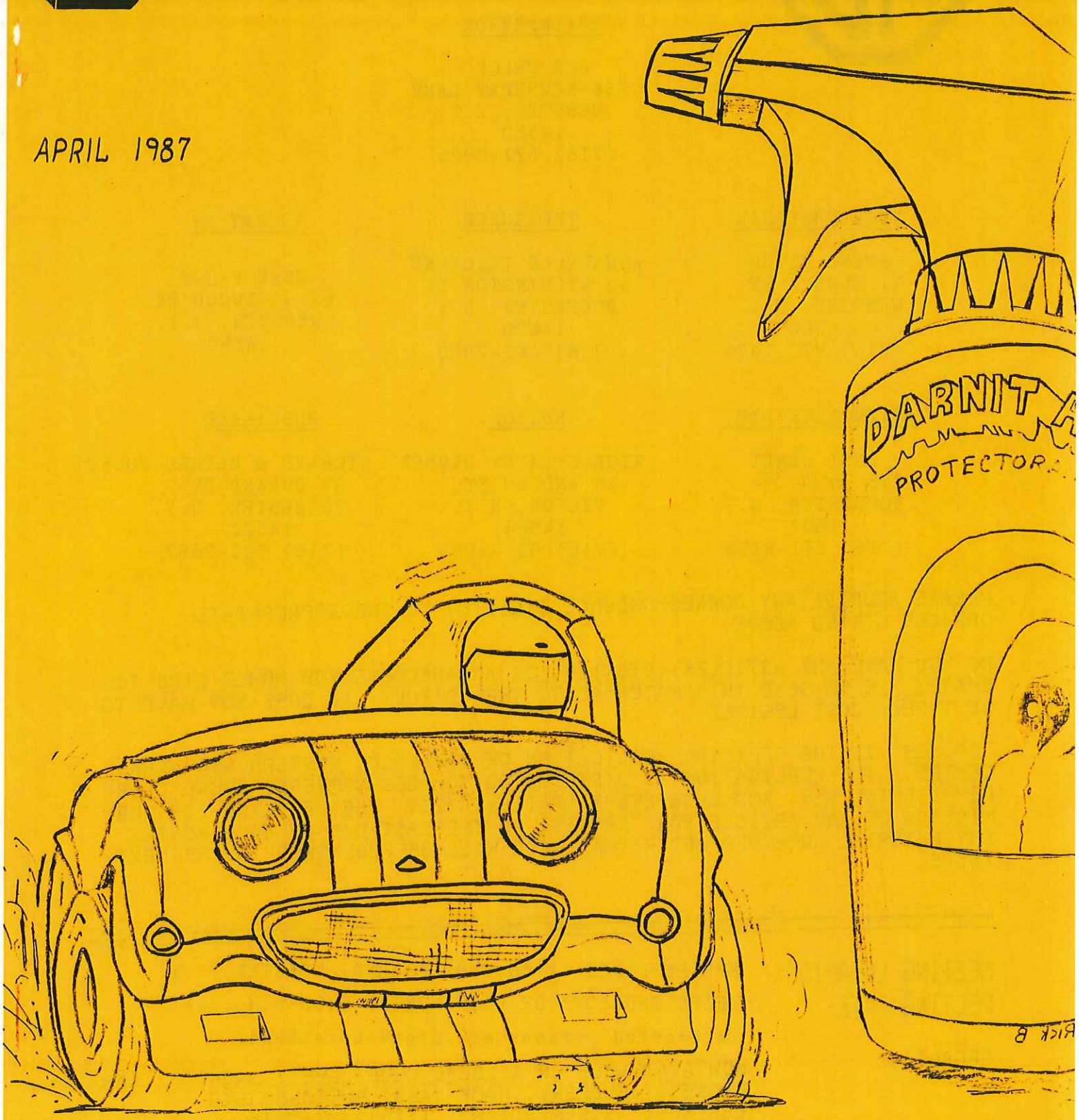
THE SPOKES

AN OFFICAL PUBLICATION OF THE MG CAR CLUB, WESTERN NY CENTRE

APRIL 1987



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PLEASE ADDRESS ANY CORRESPONDENCE DIRECTLY TO THE APPROPRIATE OFFICER LISTED ABOVE.

DO YOU HAVE ANY ARTICLES, STORIES, OR AN ANECDOTE YOU WOULD LIKE TO SHARE? PLEASE SEND THIS MATERIAL TO THE EDITOR. IT DOES NOT HAVE TO BE TYPED, JUST LEGIBLE.

"SPOKES" IS THE OFFICIAL PUBLICATION OF THE MGCC, WESTERN NEW YORK CENTRE. THE PUBLICATION IS DISTRIBUTED TO MGCC MEMBERS, LOCAL CLUB REPRESENTATIVES, AND CLUB EVENT PARTICIPANTS. THE DEADLINE FOR SUBMISSION OF ANY ARTICLE FOR "SPOKES" IS THE LAST DAY OF EACH MONTH. ANY MATERIAL RECEIVED AFTER THAT DATE WILL BE PUBLISHED IN THE NEXT ISSUE.

MEETING LOCATION: EMPIRE LANES 2400 EMPIRE BLVD. WEBSTER, N.Y.

MEETING DATE: THIRD THURSDAY OF EACH MONTH, 8:00 P.M., all interested persons are urged to attend.

REGALIA: NOW AVAILABLE ON A LOCAL CLUB LEVEL: JACKETS, CAR BADGES, JEWELERY, NAME TAGS, BUTTONS, ETC.
CONTACT: STEVE FITCH: (716) 872-1476

Chairman's Comments

At long last the weather has turned sufficiently decent to justify bringing the sports cars out of hibernation! I noticed a few T series and B's at our Winter Steak Roast last month, which by the way was well attended by our loyal troops.

During a recent business trip to Europe I had the good fortune to be able to take a few days off as the guest of Phil and Gladys Richer in Bromsgrove, Worcestershire U.K. Many of you met Phil during our "Goodbye (for now) Nuffield Cup" dinner last September at the Spring House. Phil is Overseas Coordinator of the MG Car Club and certainly came away from our get-together with high regard for the people of Western New York Centre. When I wrote to say I'd be on business in the U.K. and could we arrange to at least get together over a pint he responded that I should arrange to stay "at least a few days".

Following a 100km "flight" in a Renault 25 driven expertly by "Guido the Madman", a fellow employee from Belgium, I arrived in Bromsgrove (south of Birmingham) to news of a dinner party that night.

Myself aside the guests were June and Bill Wallis and Pat and Jim Stout. Bill had been Club Chairman for five years, prior to last year, and deserves much credit for strengthening the Club. Pat manages Club headquarters at Studley. The conversation was wide ranging, enjoyable and even included some MG stories. Compliments to Phil and Gladys for the best meal I'd had in England.

Over the next couple of days Phil and I roamed the English countryside in his '72 Saab (Triumph powered). His 'B was in for refurbishment and the Twin Cam is in storage near Southhampton. We visited Abingdon and the Club office at Studley and looked over the regalia. We also took care of our Centre's membership dues into 1990 by cashing in the receipt for the silver Nuffield plaques. All in all, it was a very enjoyable few days in the company of a truly fine gentleman and fellow MG maniac.

I have thoughts of writing a story for Spokes of my motorings through Europe, including the trip from Milan to Ostend, Belgium and the English wanderings. I will do the article if the membership can raise the required $1.8 million. Please send your checks to my address, attention: Prayer Tower before the next issue comes out. I have it on the highest authority that failure to cough up will mean your cars won't start.

Next event is the overnighter at Niagara Falls and vicinity with the Toronto Club May 2 and 3. We look forward to a good time and good turnout from both Centres. Please contact Phyllis Wagner, (716) 924-5251 to reserve your room.

See you on the 16th.

Best regards,

Bob

Bob Welch

MGCC MINUTES

Minutes of the March 19 meeting of the
Western New York M.G. Car Club

The meeting was called to order by Vice-Chairman Steve Fitch at 8:15 P.M.

The Secretary's report from the February meeting was read from SPOKES.

Bob Tescione read the Treasurer's report for Annabelle.
-Thanks to notices sent by Annabelle for members who had not paid for 1987, our membership is now up to 96 families.

Activities update
-Desi reported on the Winter Steak Roast, which will be held on Sunday, March 22 at Webster Park.
-The Early Ford V-8 Show will be held at the County Fairgrounds on the 22nd, also. Fliers will be there announcing our car show, but we will not have our usual table there because that show conflicts with our steak roast.
-An overnight event, hosted by the Toronto Club, will be held the first weekend in May in Niagara Falls. Allyn and Phyllis Wagner, and Desi Benet reported on the location and our Club's plan for an overnight event to Niagara-on-the-Lake next spring.

Car Show update:
-Any members belonging to other car clubs, please contact John Forrester or Steve Fitch. They need this information for judging purposes.
-Discussions were held regarding changes in field set-up, changes in classes, publicity and alternate route plans.
-Art Brown showed the proofs for the printed fliers posters, and tickets. All agreed they are beautifully done.
-As was done last year, shirts will be given to all who volunteer their services at the show. Dave Yackel, who did our recent MG jackets, will be contacted about the cost of the shirts.
-Also discussed were door prizes for the show. The consensus was for several door prizes, with one "grand prize." Suggestions were for a t.v., stereo rack system, C.B., or a radar detector.

Discussions were held on cars for sale, parts for sale, and our usual car related topics.

New members wre introduced, and door prizes were awarded.

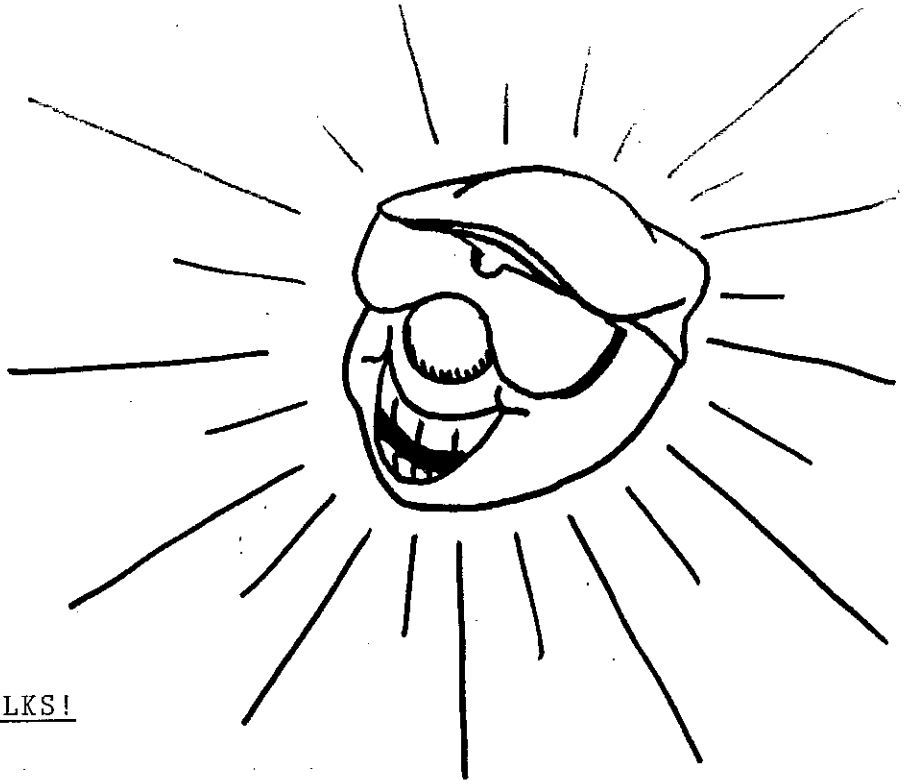
Respectfully submitted,

Steve Fitch

Next meeting: April 16 !!

Program: Radar Detectors
Find out: How they work? Do they work?
and see examples.

Our Sunshine Page



HAPPY BIRTHDAY TO THESE FOLKS!

6. Debbie Lelio
   Gwen Appleby
7. Peg Laskaris
8. Glenn Heissenberger
10. Rose Ann DiRenzi
14. Chris Bruder
    Allen Culbertson
    Phyllis Wagner
15. Rachel Masiclat
    Michelle Powarski
16. Ed Hartz
17. Stephen Herford
    Marsha Osborne
18. Erica Hames
    Marilyn Warren
20. Jay Cook
21. George Haynes
    Bob Tescione
22. Bob Laskaris
24. Timothy Cummings
28. Rosemarie Cook
29. Carmen Ferris

HAPPY ANNIVERSARY TO THE FOLLOWING COUPLES...

1. Dan & Latty Goodwin
3. Bob & Ruth Philip
11. John & Gail Borycki
13. Gary & carol Newman
16. Gerald & Jean Martin
19. Michael & Wanda Mulcahy
22. Frank & Lisa Cummings
29. Art & Cathy Appleby

WELCOME TO OUR NEW MEMBERS!!

Paul & Marsha Osborne, and kids
Ryan, Eric, Emily.
Jim Zielinski.
Joseph & Dorothy Gawronski.

Congratulations to
Nicole Marie Casolari for
being born to George & Debbie
April 8! Mom, dad & baby
are fine.

* MY THANKS TO JERRY DALOIA FOR THE 'WILD 'N CRAZY' BALLOONS AT THE STEAK ROAST. I MUST OWE YOU A HUNDRED BUCKS FOR THE VAN FULL! Rick

Join Toronto for the 4th annual
Wayne McCrae Memorial
Weekend

Niagara Falls - Niagara on the Lake

May 2 + 3, 1987

Saturday

Leave Rochester 9:30 am. Saturday
(meet at Benet's 483 Pearl St Rochester
for coffee, entourage to leave at
9:45 sharp)

Arrive Coral Inn at noon Lundy's Lane way down.
Lunch on your own
2:30 leave in convoy to Niagara on the lake
3:00 Hillebrand estates winery tour
5:00 Tea, Niagara on the Lake
8:00 Dinner, Macintash Restaurant.
Coral Inn

Sunday

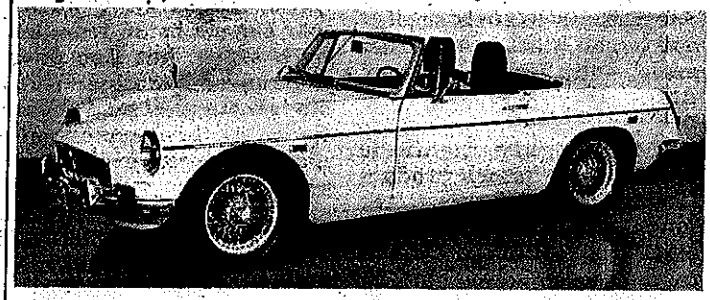
Breakfast
11:00 carshow + Punkahna
Queenston Heights Pk
12:00 box lunch from Hotel
1:00 Judging + Prizes
Goodbyes

Reservations - Phyllis Wagner
Info - Desi Benet 271-8178

W I N T H I S C A R

1969 MGB

The MGB, America's favorite imported sports car, is being offered by the Friends of the Crawford Auto-Aviation Museum, Cleveland, Ohio with the proceeds for the benefit of the Museum. Drawing will be held at the Hale Farm V.M.C.C.A. Meet in Bath, Ohio, on August 9, 1987.

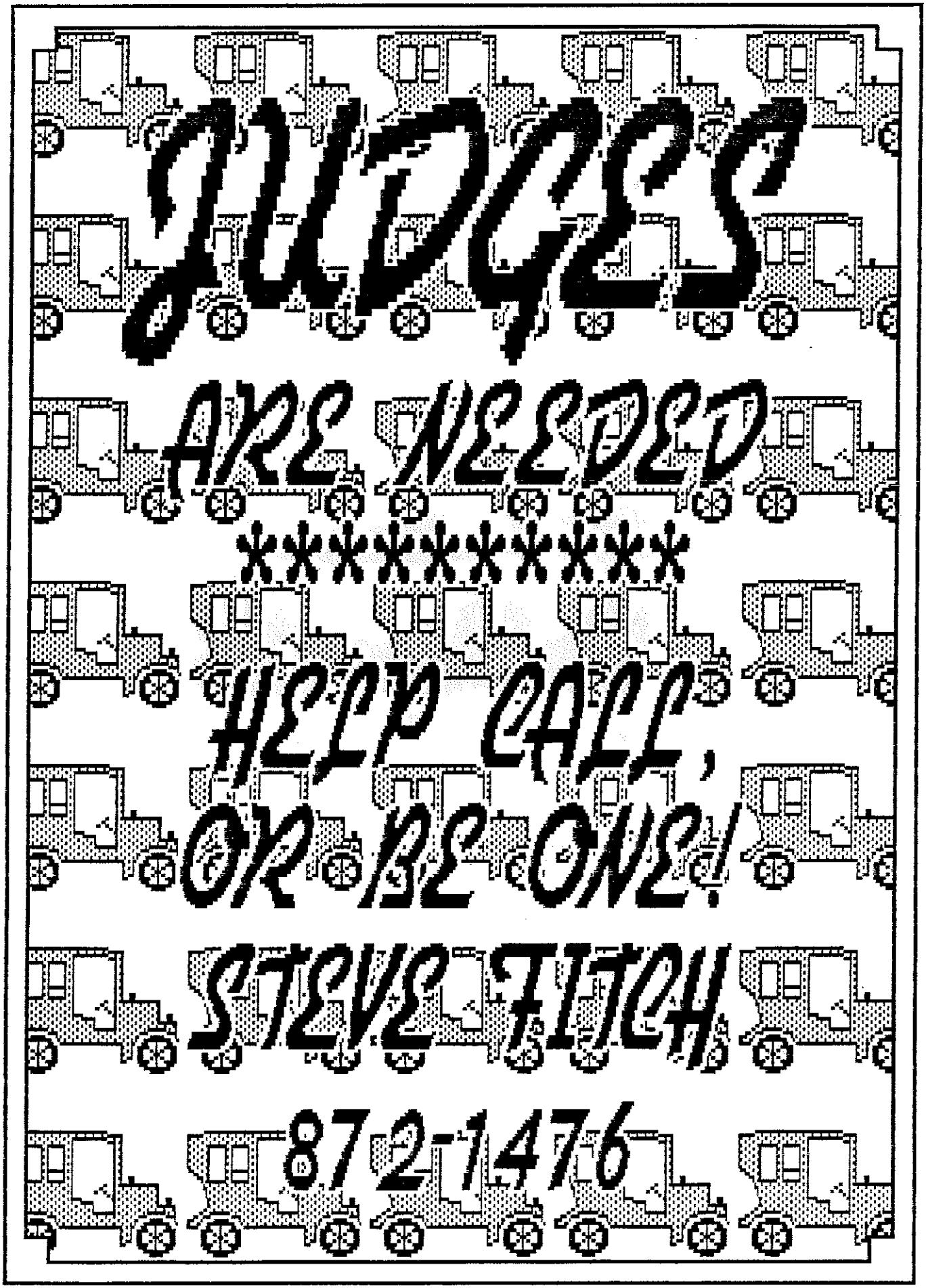


Tickets are $5.00 for a book of eight. Send check or Money Order payable to FRIENDS OF CRAWFORD along with a S.A.S.E. to P. O. Box 751, Willoughby, Ohio 44094. Winner need not be present.

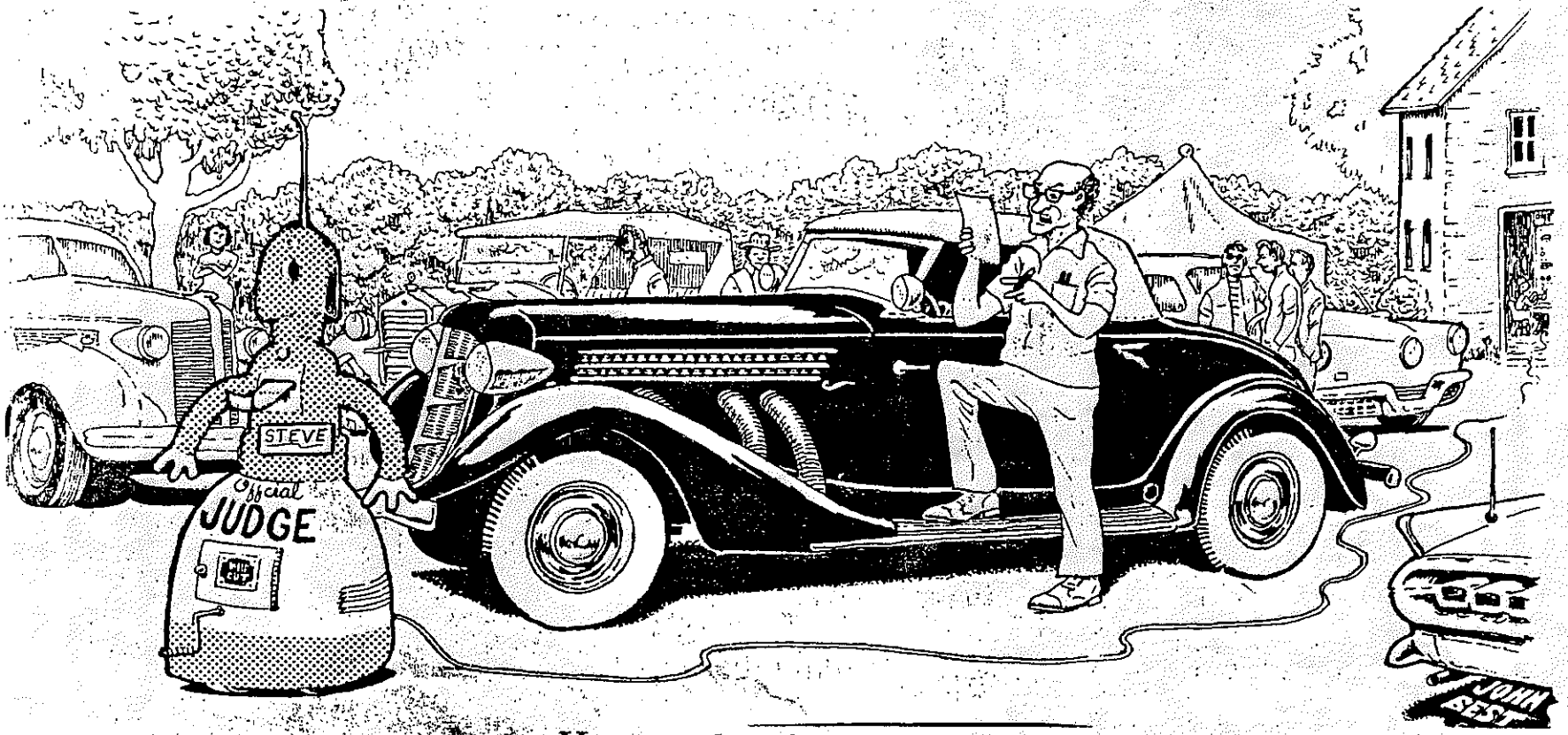
Bob -

thought you might be interested -

Rick 4-3


JUDGES
ARE NEEDED
****
HELP CALL,
OR BE ONE!
STEVE FITCH
872-1476

Wilber, The Car Collector



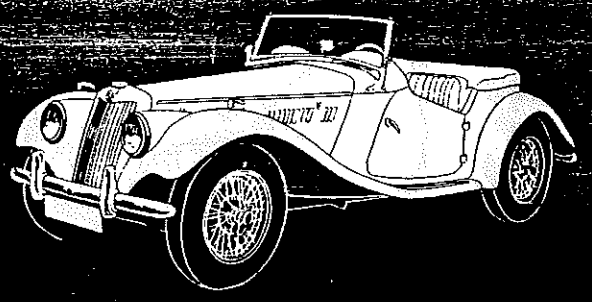
You oughta be unplugged!

ROAD and TRACK ROAD TEST No. F-3-54

MG-TF-1250

SPECIFICATIONS

Wheelbase	94.0 in.	Horsepower	57.5
Tread, front	48.2 in.	peaking speed	5500
rear	50.8 in.	equivalent mph	84.0
Tire size	5.50 x 15	Torque, ft/lbs	65
Curb weight	2020 lbs.	peaking speed	3000
distribution	50/50	equivalent mph	46.0
Test weight	2370 lbs.	Mph per 1000 rpm	15.3
Engine	4 cyl.	Mph at 2500 fpm piston speed	65.0
Valves	ohv	Gear ratios (overall)	
Bore and stroke	2.62 x 3.54	4th	4.88
Displacement	76.3 cu in. (1250 cc)	3rd	6.75
		2nd	10.09
Compression ratio	8.00	1st	17.06
R & T performance factor	36.6	List price	$2260



PERFORMANCE

Top speed (avg.)	80.1
fastest one way	82.5
Max. speed in gears—	
3rd	64
2nd	43
1st	26
Shift points from—	
3rd	60
2nd	41
1st	24

ACCELERATION

0-30 mph	5.5 secs.
0-40 mph	8.8 secs.
0-50 mph	13.0 secs.
0-60 mph	18.9 secs.
0-70 mph	29.0 secs.
Standing start ¼ mile	
average	21.6
best	21.3
Mileage	20/23 mph

TAPLEY READINGS

Gear	Lbs/ton at Mph
1st	430 at 20
2nd	340 at 30
3rd	220 at 36
4th	160 at 45

COASTING

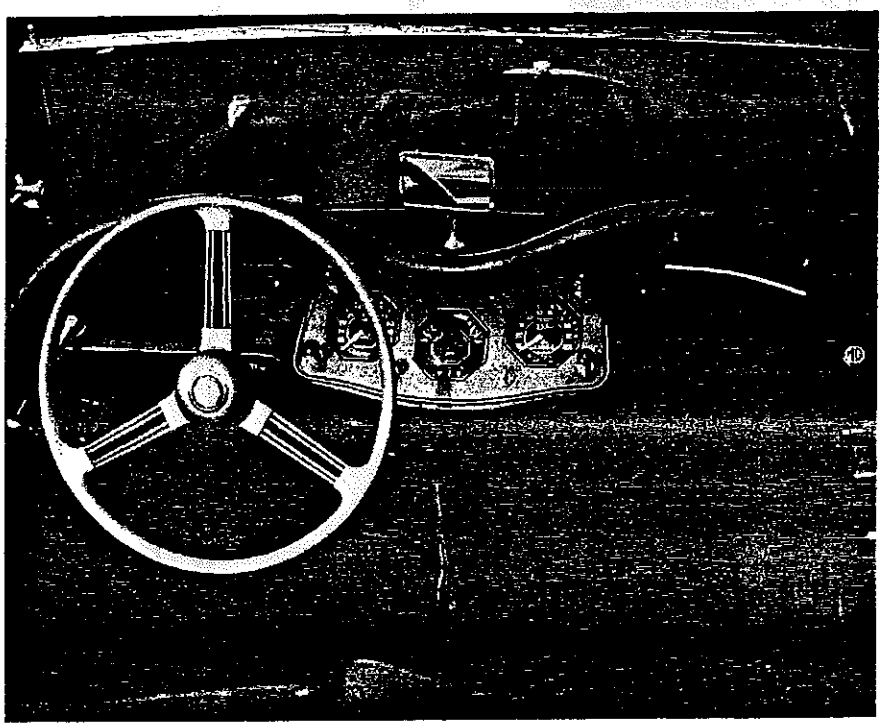
wind and rolling resistance

105 lbs/ton	at	60
40 lbs/ton	at	30
20 lbs/ton	at	10

SPEEDO ERROR

Indicated	Actual
10 mph	12.2
20 mph	19.7
30 mph	28.8
40 mph	37.2
50 mph	46.9
60 mph	55.6
70 mph	65.0
80 mph	75.0

America's Best Sports Car Buy



MG-TF cockpit features assist grip, octagonal instrument faces—but still has no gas gauge.

Of all the cars which we have occasion to drive there is one above all others which, by its every characteristic, clearly defines the term "sports car." Every time we drive an MG, whether it be the TC, the TD, or, as in this case, the new TF, the thought comes to mind—here is a car that exemplifies far better than mere words the answer to the question: "What is a sports car?"

To drive an MG is sheer pleasure. This is no car for the average Joe looking for transportation. Only those who know and appreciate the fun of driving a car which responds to skillful handling will ever get to like an MG. To drive an MG like an old maid is a sacrilege—a slow corner is taken in 2nd gear, a fast uphill bend is rounded in third, high speed curves become a demonstration of accurate steering. Because an MG responds to skillful driving, its owner takes pride in improving his driving, yet because of its impeccable handling qualities, the MG is far less prone to get into trouble, is in fact far safer than any other car of the family type.

To those who have never owned an MG the new TF is an anomaly—a retrogression. The revised styling, though lower and more rakish, is still far from being modern. The performance is well below the 1954 Detroit norm and you have to shift gears. Yet the fact remains that the entire staff of ROAD &

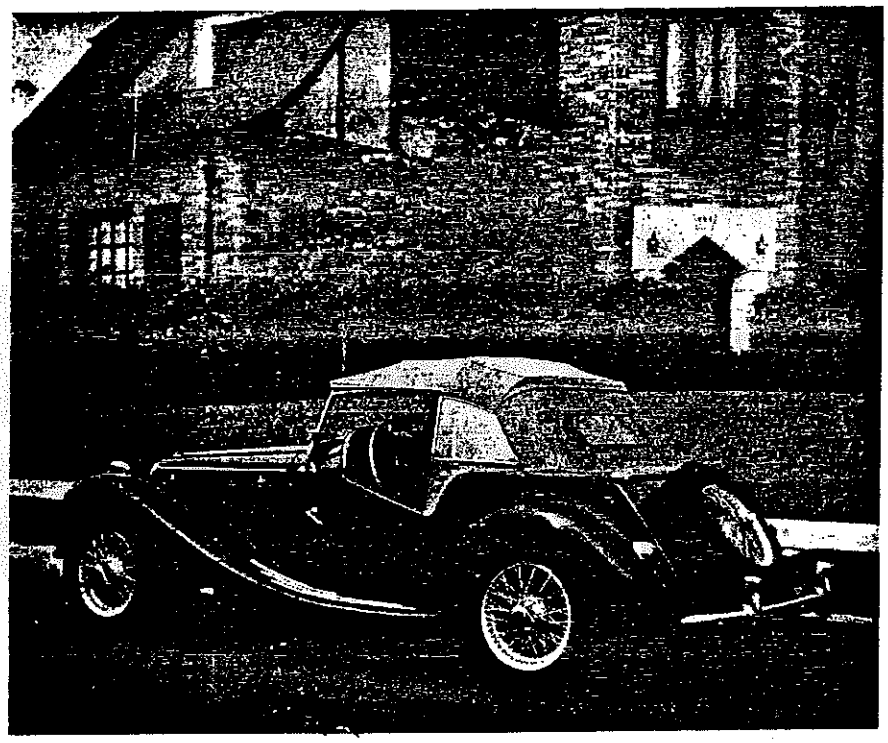
TRACK vied with each other to produce the best reason for using the MG.

Aside from the styling changes and the wire wheels (optional, $135 extra), there is little to record as being different from the Mark II TD model of the past two years. The car weighs the same, handles the same, and performs substantially the same as before. The car's designers have adopted most of the Mark II engine features as standard equipment and employ the "faster" axle ratio of the Mark II to enhance the cruising and top speed performance. Acceleration is only slightly improved over the stock TD model, the inevitable result of the higher axle ratio.

During 1953, we road tested four MGs. The acceleration of the TF falls between the figures for the TD and the Mark II published in February 1953. Both acceleration and top speed of the TF are not equal to the 9.3 compression Laystall-Lucas equipped TD with 5.125 axle ratio, published in January, 1954. The high speed runs indicate that the gearing is nearly perfect for best top speed since 82.5 mph is equivalent to 5400 rpm—very close to the engine's peaking speed with the stock exhaust system. As a matter of interest, we once saw a speedometer reading of 102 downhill which would be an actual 95, assuming the speedometer error remains consistent at about 7%.

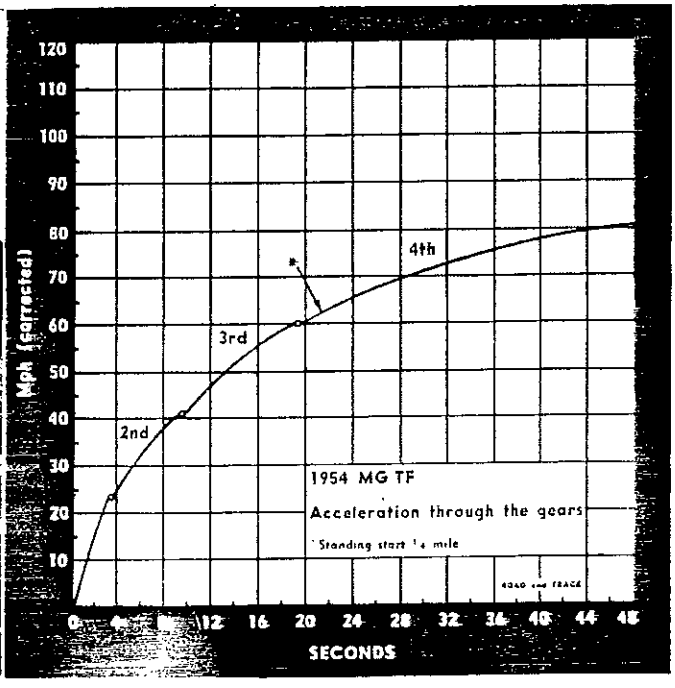
Though the car has a number of new features which we liked, there are a few items which we disliked. The new instrument panel, though good looking and well lit, can be criticized on several points. The new centrifugal type tachometer oscillates badly at times (though it is noiseless), the oil pressure gauge reads only 0-50-100 psi, the pull type starter is very unhandy, and there is still no fuel level gauge. The foot operated dimmer switch, though of necessity placed rather high, is a worthwhile improvement, but the foot controls are still too close together and there is no positive stop for the accelerator pedal at wide open position—it bends and still has the familiar rattle.

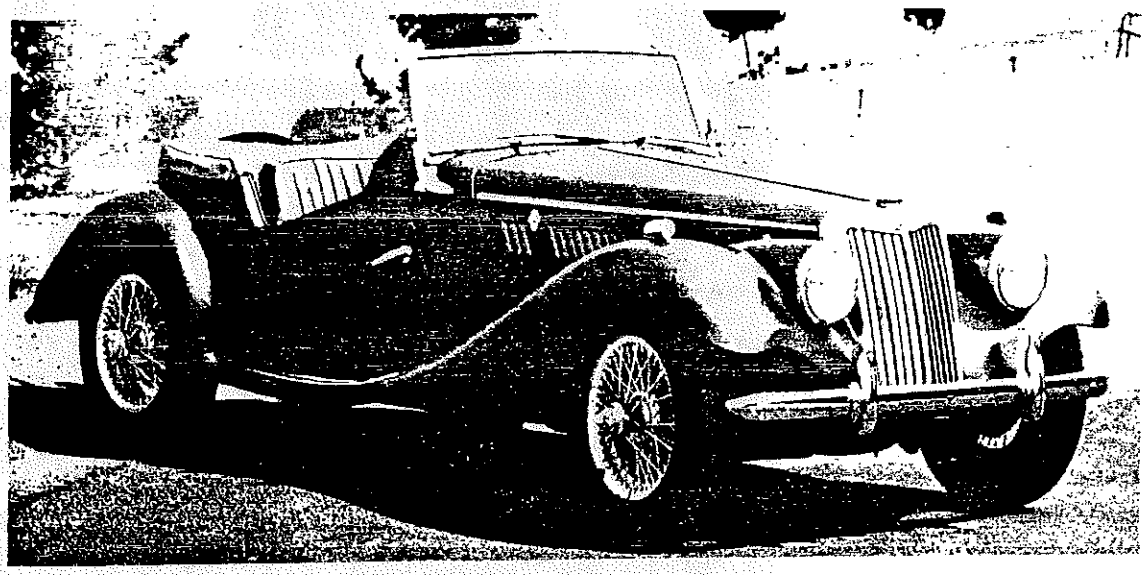
The clutch on this particular car (2800 miles on the odometer) was a little grabby on normal starts and yet slipped when brutal snap-shifts were attempted from 1st to 2nd. Normal city driving was not enhanced by a carburetion fault diagnosed as "over-carburetion." Below 2000 rpm the engine is flat, and not until 2500 does the power really take hold. Corrective carburetor needles are now available, but we suspect that the old 1¼" SU carburetors would be more satisfactory than the 1½" units now supplied. There is also somewhat more power roar at high speeds as a result of using a pair of small air cleaners.



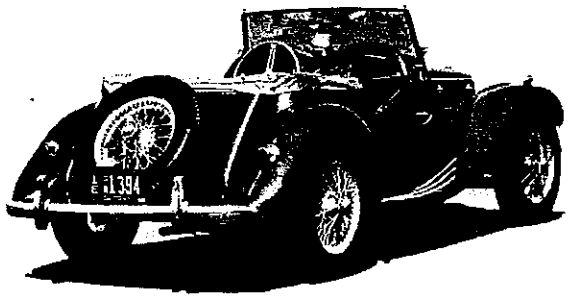
Summed up, and despite our few carping remarks, the TF is still the greatest sports car for the money available today. It offers a competition potential combined with the ability to stand up to extremely hard every day driving, plus a modest price and reasonable depreciation.

Ken Miles said when he handed the car over to us, "There she is. See if you can break her up." We tried, and it ran just as smoothly and quietly after 400 miles as before. Even the office girls hated to see the TF go back. ●





With a new and bigger engine, the MG TF, one of the world's favorite sports cars, becomes, for 1955—



THE MG 1500

Road Test and Technical Description

OVERHEARD in Road and Track's photo lab: "so the 1955 MG has a full 1.5 litre engine at last—too little, too late, so what. I could drink the extra cc's in one gulp." Whereupon Rolofson produced a graduated beaker and measured out 216 cc of water. The heretic was unable to drink this quantity without pauses, which proves a point.

Proof that the extra 200-odd cubic centimeters are well worth-while can be summarized neatly in one sentence. The larger bore engine adds 5 mph to the top speed, reduces the time of acceleration to 60 mph by 3 seconds. With an increase of 17% in both piston displacement and torque the improved acceleration in the lower speed range is shown by 2 seconds better time over the standing ¼ mile test, yet the terminal velocity (speed at the end) is only 2 mph higher.

One of the difficulties in performance testing new model cars is to get a demonstrator with sufficient mileage, and still be able to publish the data early enough to coincide with the car's announcement. In this case, the car had 950 miles on the odometer when we began the high speed runs. The ambient temperature was 85° F, altitude zero, road level and there was a slight breeze. With windshield erect, top and side curtains folded the north run gave 86.9 mph, the south run 80.4 mph. With top and side curtains in place (our usual practice) the north run gave 88.2 mph, the south run 82.5 mph. With more mileage and no wind, the new MG-1500 should be capable of a good, honest 88 mph in full touring trim. Incidently, the speedometer was commendably accurate, indicating 91 mph during the best run. Highest reading on the highway was 96 mph on a slight downgrade.

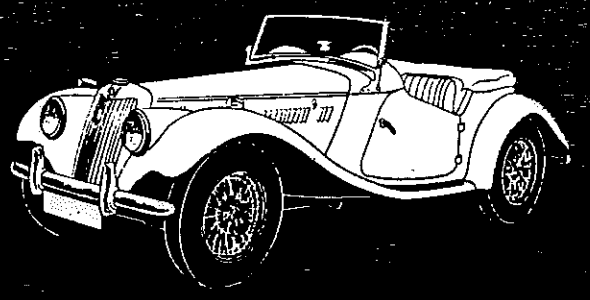
The high speed runs, together with nearly 400 miles of high speed driving, demonstrated once again the magnificent handling qualities of the MG. The steering is as near perfect as a car can be. It is quick, precise, responsive—all the superlatives rolled into one. Low speed corners or high speed bends can be taken with the greatest of confidence, thanks to car which neither over nor understeers, at least up to the point of rear-end breakaway. Admittedly, there is some roll as a consequence of a suspension layout which gives the MG a ride that is as good as any sports car on the market today and one which is a happy compromise for all save the most ardent competition driver.

In our road test of the 1250 cc MG-TF (March, 1954), a carburetion fault was mentioned. Subsequent experience with other 1954 cars indicate that the "flatness" below 2500 rpm is probably typical. The new 1500 model has no such flat spot and the larger engine now seems to have offset the over-carburetion (two 1½ inch S.U.s), which was so noticeable last year. As a matter of fact, the 1466 cc. engine seems to have been detuned ever so slightly and it should be pointed out that the bhp, torque and compression ratio listed under specifications are not "official" factory data.

MG owners are used to the usual stupid questions including 'how many miles to the gallon do you get?" Of course a sports car

ROAD AND TRACK ROAD TEST NO. F-18-54

MG-TF-1500



SPECIFICATIONS

List price	$1995
Wheelbase	94.0 in.
Tread, front	48.2 in.
rear	50.8 in.
Tire size	5.50-15
Curb weight	2015 lbs.
distribution	50/50
Test weight	2295 lbs.
Engine	4 cyl.
Valves	ohv
Bore & stroke	2.835 x 3.54
Displacement	89.4 cu in. (1466 cc)
Compression ratio	8.00
Horsepower	65
peaking speed	5500
equivalent mph	84.0
Torque, ft/lbs.	76
peaking speed	3000
equivalent mph	46.0
Mph per 1000 rpm	15.3
Mph at 2500 fpm	65.0
Gear ratios (overall)	
4th	4.88
3rd	6.75
2nd	10.1
1st	17.1
R & T perf. factor	43.0

PERFORMANCE

Top speed (avg.)	85.4
best run	88.2
Max. speeds in gears—	
3rd	64
2nd	43
1st	26
Shift points from—	
3rd	61
2nd	41
1st	24
Mileage	23/26 mpg

ACCELERATION

0-30 mph	4.8
0-40 mph	7.1
0-50 mph	11.0
0-60 mph	16.3
0-70 mph	24.7
Standing ¼ mile—	
average	20.7
best	20.5

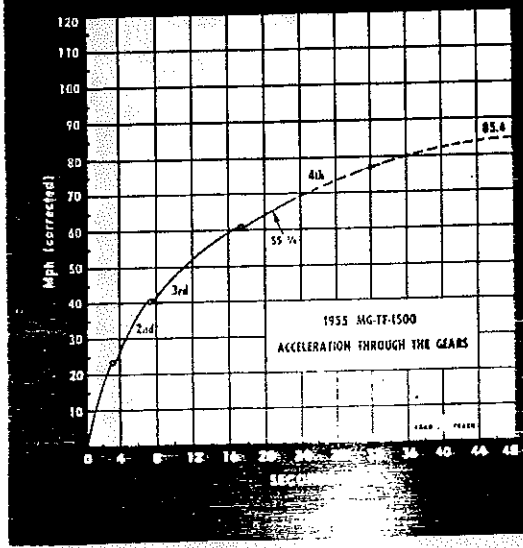
TAPLEY READINGS

Gear	Lbs/ton		Mph
1st	500	at	22
2nd	390	at	33
3rd	270	at	40
4th	180	at	46

Total drag at 60 mph..119 lbs.

SPEEDO ERROR

Indicated	Actual
10	10.0
20	19.5
30	28.7
40	38.7
50	48.3
60	57.5
70	66.2
80	75.0



is not designed for economy, but our records prove that the new 1500 is more economical than last year's 1250 cc model. The overall figure for 386 miles was 23.4 mpg and they were hard miles.

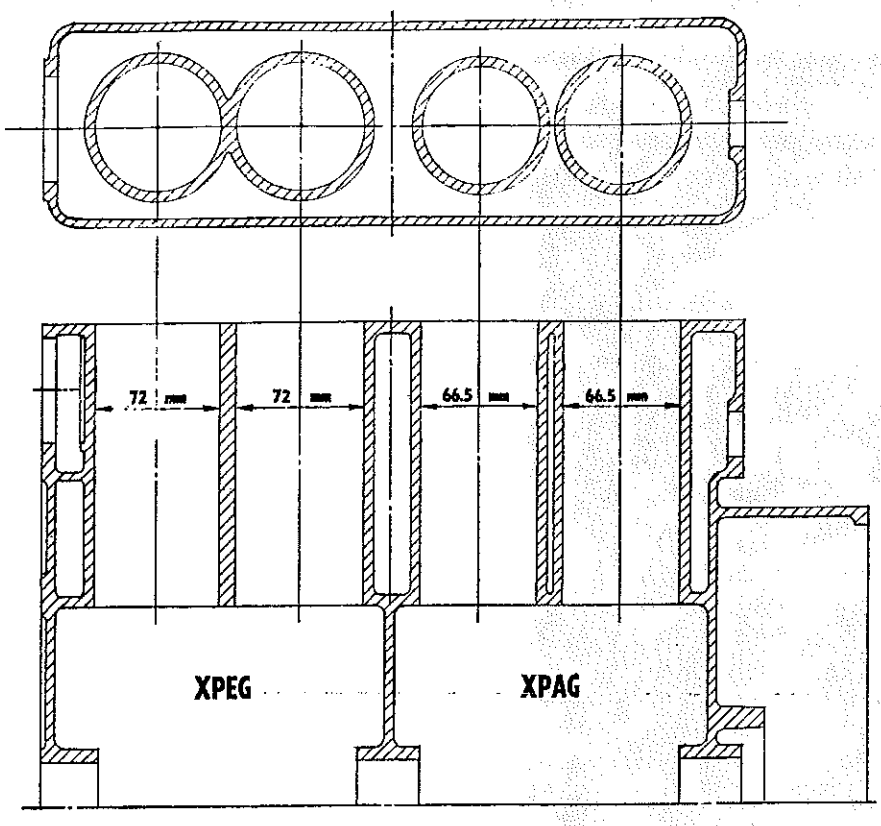
The comfortable cruising speed of the new MG is 75/80 mph, indicated. In view of the service record of the XPAG series of engines, the new XPEG engine can reasonably be expected to cruise safely at piston speeds well over the usual norm of 2500 fpm. Both 2500 and 3000 fpm piston speeds are indicated by vertical dotted lines on the rpm vs mph chart (page 39), corresponding to 4240 and 5085 rpm. The higher rpm gives 77.7 mph and the ability of this engine to "take it" means that the safe cruising speed can be governed primarily by road and traffic conditions.

Aside from the larger engine there are no important revisions in the 1955 TF. Gough Industries, Distributors, loaned us the car and even they didn't know exactly what sort of an emblem is to be applied on the forward sides of the hood. There are two small holes there, and apparently a pair of die-cast plates will be attached, bearing an inscription which will designate the "1500." The brass engine nameplate says XPEG instead of XPAG and the dash plate also is stamped XPEG. Other than that there are no clues as to whether this is a 1954 or a 1955 model.

One bitter disappointment was that at no time did we encounter as unsuspecting 1250 cc MG, for purposes of impromptu competition. We could imagine the look on his face as the new bigger engine swept us ahead. We did get one "customer" on an uphill road. The MG held 80 mph with the big Ambassador riding our bumper. As we went over the top and started downhill, the indicator went to 90—the Nash was still there. Then we entered a series of fast downhill curves, the Nash slowed down and never appeared again.

After last year's test on the TF was published, a well known writer asked us "the new TF isn't that good, is it?" Our answer to that is, we think it is every bit as good as we say, and more. Even though the MG is the lowest priced sports car on the market, it is the accepted standard of comparison. No one ever questions the application of the term "genuine sports car", to the MG. From its classic styling to its high efficiency engine, the MG personifies and defines the term "sports car" better than words can describe. Its ability to stand-up under the most strenuous type of competition driving has given this car a reputation for stamina second to none. Its handling qualities have brought about a re-education to thousands of Americans, who prior to 1949, had never before heard the words "cornering ability." If we seem to like the MG (and we do) it's because it *is* good.

Yes, the new MG is now more than ever a fun-car, yet its new low price of $1995 makes it even a better value. Last year we said the new TF was "America's best Sports Car Buy." This year you can have wire wheels and the larger engine for over $100 less than the 1954 model without the wire wheels.



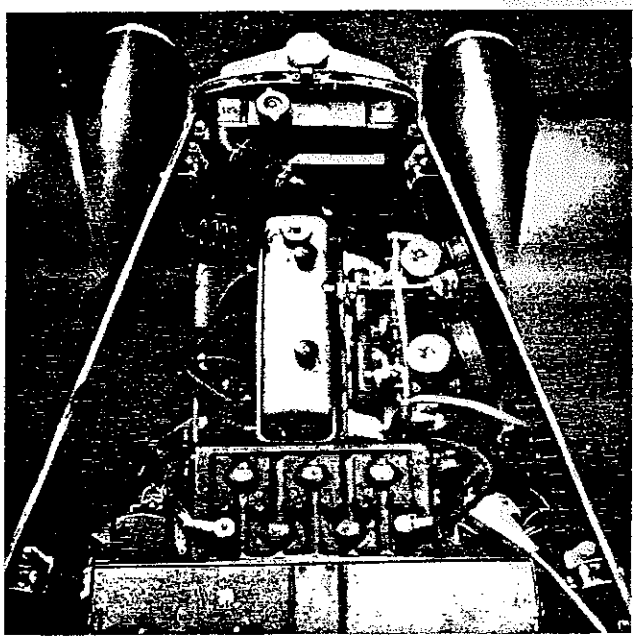
Cross section drawing by the Tech Ed. is approximately to scale and shows how the 1250 cc XPAG cylinder block was revised to XPEG specifications without changing the cylinder bore center distance or the stud spacing.

The new 1466 cc MG-TF corners without under or oversteer but there is some "roll".

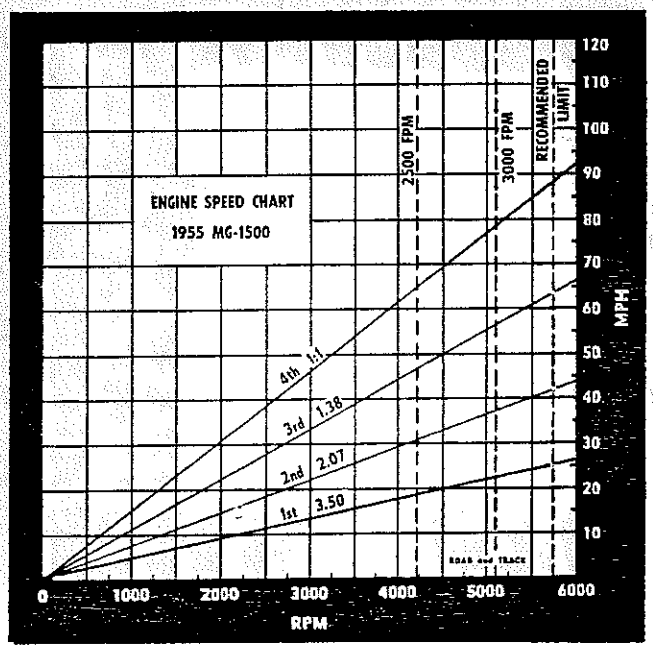
One question regarding the enlarged MG engine will be asked. "How is it done and what is changed?" The only change is a bore increase from 66.5 to 72 mm (2.618 to 2.835 inches). To do this a new cylinder block casting is required so that the usual wall thickness of .20" to .25" will be maintained. Only the core boxes which form the water jacket portions of the block are affected, since in this case, MG engineers have chosen to maintain the same cylinder bore center distances as before. Our scale drawing shows a cutaway section of the cylinder block casting with the rear pair of cylinders (at the right) drawn as the old XPAG casting, the front pair of cylinders as the new 1466 cc block is cast. You will notice that the smaller bore allowed water to surround completely each of the cylinders, whereas the larger bore requires a common wall between each pair of cylinders. This practice is commonly known as siamesed cylinders. Although at first glance it may appear that cooling efficiency will be hampered, it happens that the common-wall is 90° from the piston thrust surfaces. Something like 50 million engines have been built with siamesed cylinder walls (half of them 4 cylinder Fords) and recent American cars having a similar design include every post-war six cylinder engine except Pontiac-Chevrolet.

A second question that is perennial concerns the optimum axle ratio for the MG. Since the new 1500 turns its top speed average of 85.4 mph at 5560 rpm, we can say that the present 4.875 to 1 axle ratio is as near perfect an all-around compromise as one could possibly achieve. However, if you are the long distance touring type, the optional 4.55 ratio will drop the performance potential 7%, and still be roughly 9% better than the 1250 cc TF. Cruising speed at 3000 fpm would increase to 83.1 mph, if that's any comfort. We believe 99% of the new 1500 purchasers will be well advised to accept the stock axle as being the best all-around ratio for their usage. ●

There is no clue as to whether the engine is 1250 or 1466 cc.



This useful chart gives engine speed in any gear, at any speed.



CONSUMER REPORTS FEB. '87

WHAT'S BEST FOR YOUR CAR

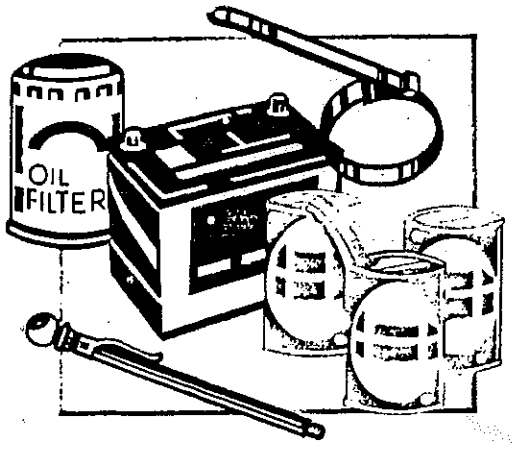
A few years ago, we asked readers who own old or high-mileage cars what they had done to keep their car running "almost forever." Their answer: Keep the car garaged, pay close attention to the advice in the owner's manual, and—most important of all—change the oil frequently.

For the report that begins below, we tested 35 motor oils—popular brands in the three grades most often recommended. Our findings can help you decide which oil will be best for your car.

Between oil changes, the engine depends on an oil filter to keep the oil free of grit. But we found, in testing more than 60 filters, that some do a much better job than others. The report begins on page 95.

We also took a look at oil-filter wrenches of every conceivable design. The report on page 99 can help you find one that will make oil-filter changes easy.

Even the best-oiled car won't ride smoothly if its tires aren't inflated to the right pressure. And the car won't run at all if the battery dies. To round out this section, we tested tire-pressure gauges for accuracy; see page 108. And we tested 15 popular batteries; see page 103.



Motor oils

All brands are not created equal.

Oil is the lifeblood of a car's engine. It reduces friction and wear on the engine's moving parts, and it does much more. It helps cool the engine, and it seals the tiny gaps between the piston rings and the cylinder walls to maintain engine efficiency. It cleanses the engine, holding contaminants in suspension and preventing them from forming harmful deposits. And, rather like an antacid, it counteracts the corrosive substances that form in the normal course of driving.

To do all that work properly, the oil must be changed frequently. Some automakers, in an effort to make their cars more maintenance-free, have extended the oil-change interval to 7500 miles or 12 months of "normal" driving—trips at highway speed on clean, paved roads in moderate weather. Short trips around town, stop-and-go traffic, high speed, and other seemingly normal situations are more severe on an engine and call for a short interval between oil changes. Every 3000 miles or three months is a good rule.

Which oil should you buy? You can rely on your car's owner's manual to tell you what basic types of oil are suitable. Beyond that, you're pretty much on your own. That's where this report can help.

We bought samples of 35 popular motor oils in five metropolitan areas. Then we

contracted with a specialized laboratory to test the oils for the important characteristic of viscosity (resistance to flow), as well as for several other characteristics related to viscosity. We also had the oils checked to see if they included the additives they were supposed to. And we asked manufacturers for test data to document their performance claims.

Because our tests were fairly limited, we can't tell you how a given brand of oil will perform overall. That's why we put the oils in a Listings instead of a Ratings. Still, our tests can tell you enough to help you choose an oil wisely, whether you do your own oil changes or trust the job to your local mechanic.

Through thick and thin

An oil's viscosity varies inversely with the temperature. At low temperatures, oil has a high viscosity. That's one reason a cold engine can be hard to start. Even if the engine starts, an oil that's too thick may not reach all the moving parts quickly enough to protect them from damage.

An oil that's too thin is also undesirable. As the engine warms up, the oil thins out. It can conceivably be thin enough to be squeezed out from between the moving parts, resulting in metal-to-metal contact and excessive wear. Ideally, the viscosity of an oil should remain fairly constant over the entire range of an engine's operating temperatures.

You're probably accustomed to asking for 10W-40 oil. Those numbers refer to the oil's viscosity grade, as defined by the Society of Automotive Engineers (SAE). In essence, the viscosity-grade numbers are a guide to how the oil flows at various temperatures. The higher the numbers, the higher its resistance to flow. Automakers recommend specific viscosity grades for their engines, recommendations that depend in part on outside temperature ranges. The specifics appear in the car's owner's manual.

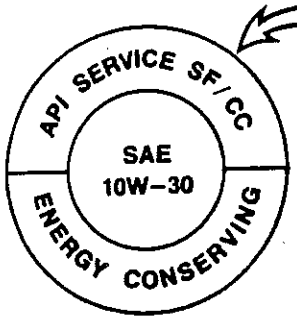
Multigrade oils. Most oils sold today meet SAE viscosity standards at both high and low temperatures. Known as multigrade or multiviscosity oils, they contain viscosity-index improvers—additives that keep the oil from thinning out too much as it gets hot. Multigrade oils are especially suitable for all-season use.

Although viscosity-index improvers serve a useful function, they can sometimes shorten engine life. When some viscosity-index improvers get very hot (as they do around the pistons), they decompose into a carbonlike substance that can make the piston rings stick or even break. That's a particular problem in diesel engines. A 10W-40 oil contains more viscosity-index improver than a 10W-30 oil, so a 10W-40 is generally unsuitable for diesel engines. Even in gasoline engines, some types of viscosity-index improver can cause damaging deposits.

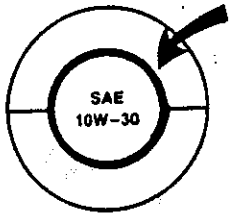
Since you can't tell whether the viscosity improver in a given oil will break down under heat, you'd be wise to avoid oils that contain high dosages. We suggest you stay away from multigrade oils with a wide spread in numbers, such as 10W-50. Use the narrowest spread that's suitable for the climate in your area. If you own a diesel, stay with 10W-30 or 15W-40 oils.

Much of the oil you'll see in stores is 10W-40. By one estimate, the 10W-30 oils account for about one-fifth of the market; single-grade oils and other multigrade oils account for one-fourth. The dominance of 10W-40 may be waning,

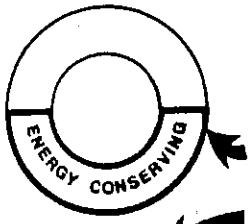
Reading an oil container



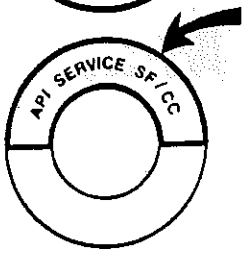
Most oil cans and bottles carry a symbol like the one shown here. It's used by manufacturers under license from the American Petroleum Institute (API). Before a company can use the API symbol, it must test the oil to be sure it's up to API standards. Although the API uses the honor system and doesn't normally check the companies' data, the API symbol is the closest thing you'll find to an assurance that an oil meets industry standards. Of all the products we tested, only *Exxon* lacked the symbol; that company's newest product will carry it.



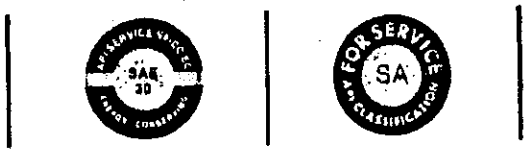
This is the viscosity grade. The SAE stands for the Society of Automotive Engineers, the organization that sets many of the standards for oil performance. The other characters define the oil's viscosity grade. This 10W-30 oil is a multigrade oil, suitable for all-season use; a single-grade oil, such as SAE 10W, should not be used year round. The first part of a multigrade designation refers to the oil's flow properties at low temperatures. (The SAE's standards for a 10W oil are that it fall below a certain maximum viscosity at minus 4°F, that it be pumpable at minus 13°, and that it be pourable at minus 22°.) The W denotes an oil recommended for winter use. The second part of the designation refers to the oil's high-temperature flow properties, measured at 212°. In this example, the 10W means that the oil, when cold, is relatively thin. Viscosity-index improvers contained in this oil make it behave as if it's a relatively thick SAE 30 oil when warm.



This indicates that the oil can help improve fuel economy by a fraction of an mpg. It usually contains friction modifiers.



This is the performance or service level. The S means the oil is suitable for gasoline engines. The next letter, a scale from A to F, indicates the oil's performance level as measured in laboratory engine tests. Some oils also carry a designation such as API Service CC or CD. The C means the oil is suitable for diesel engines; the performance scale runs from A to D. For gasoline engines, the SF performance level is the latest and contains a complete package of additives. In cars manufactured before the SF level was introduced, the owner's manual may recommend an earlier level such as SE or SD. SF oils may be used—and, in fact, are preferable—in such cars.



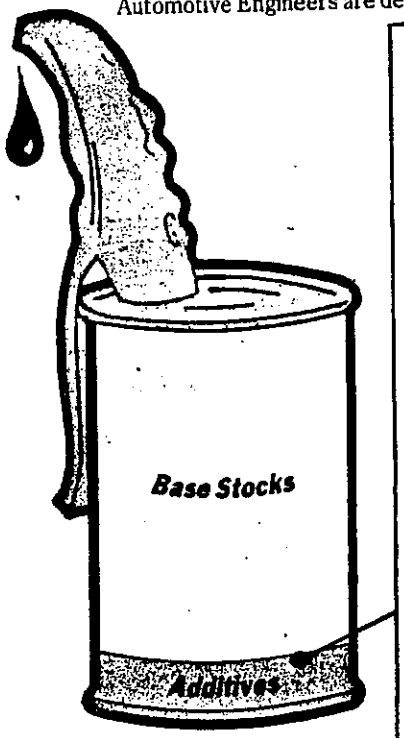
Watch those API symbols. One of our engineers spotted these two, on different containers of K Mart oil. The one on the left is an official API symbol. The one on the right is a package designer's knockoff—an unofficial symbol for an obsolete type of oil that contains no additives at all.

Reprinted courtesy of the American Petroleum Institute

It's more than fossil fuel

You may have heard that oil from Pennsylvania, or Texas, or wherever, is best. Forget it. All oil starts out as crude petroleum. Some comes from the U.S., but much of it is produced in the Middle East. A refinery processes the crude, separating it into lubricant base stocks, liquid fuels, and other petroleum products.

The quality of the base stocks varies widely, depending on their source and the refining process. But a base stock may bear little resemblance to the finished motor oil. Refiners can tailor the characteristics of the oil extensively with chemical additives. On average, about 85 percent of the finished oil is refined base stock; the rest is additives. The additives that an oil must contain to meet the highest standards of the American Petroleum Institute and the Society of Automotive Engineers are described below.



Additives

Viscosity-index improvers. Contained in multigrade oil such as 10W-30, these substances keep the oil from thinning too much as it heats up in an engine. Viscosity index improvers are covered in more detail in the accompanying report.

Dispersants. They keep various contaminants in suspension, preventing them from settling out on vital engine parts. The oil filter traps the coarser contaminants. The rest are dumped when you change the oil.

Detergents. They act like soap, keeping the engine free of varnish and sludge deposits, preventing carbon from building up around the piston rings, and neutralizing acids. Nondetergent oils were commonplace years ago. Today, they're best left for taking the squeak out of roller skates.

Antiwear agents. Pressure between some engine parts may get so high that the lubricating film is squeezed out. These additives interpose a chemical film to protect against wear.

Antioxidants. Oxygen tends to react chemically with oil, eventually making it thick and tarlike. Oxidation speeds up when the oil gets hot—when you drive at high speed, climb a long hill, or tow a trailer, particularly in hot weather. Antioxidants react with oxygen, sacrificing themselves to save the oil.

Rust and corrosion inhibitors. Acids and water form in the engine as fuel burns. Starting a cold engine accelerates the process. These inhibitors neutralize the acids and seal metal surfaces against the water.

Friction modifiers. They're a recent addition to oils. Their job is to reduce engine friction; they improve fuel economy by less than 1 mpg. An oil labeled as "energy conserving" usually contains friction modifiers.

Pour-point depressants. In cold weather, wax in the base stocks causes the oil to thicken. This additive prevents wax crystals from forming and lowers the pour point—the lowest temperature at which the oil will pour.

Foam inhibitors. Air gets churned into the oil as the engine runs, creating a frothy mix that makes for poor lubrication. This additive helps collapse the air bubbles.

since many automakers now recommend a lighter-weight oil. General Motors, for one, recommends 10W-30 for most of its cars, 5W-30 for others. Some GM owners' manuals warn against the use of 10W-40 oils. We selected SAE 10W-40, 10W-30, and 5W-30 oils for our tests.

Single-grade oils. These don't have viscosity-index improvers; they carry a single-number designation such as SAE 10W or SAE 30. In hot weather, an SAE 10W oil is too thin for adequate lubrication and sealing. And in cold weather, an SAE 30 oil is too heavy to flow properly. In most parts of the country, a single-grade oil should be changed each season.

Pouring and pumping. The SAE's standards specify tests not only for high- and low-temperature viscosity, but also for an oil's ability to be pumped and poured at very low temperatures. The pour point—the lowest temperature at which the oil can flow—doesn't always remain constant. Repeated heating and cooling of the oil can raise the pour point, preventing proper flow when the engine starts. A rash of engine failures in cold regions in the early 1980s prompted the SAE to modify its grading system with a test for a "stable" pour point. For 10W oils, the highest stable pour point allowed is minus 22°F; for 5W oils, minus 31°.

Making the grade

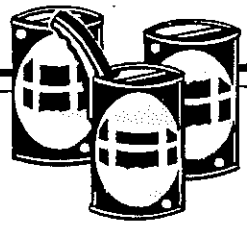
We spot-checked each brand of oil to see if it complied with the SAE standards for the viscosity grade claimed. They all fell within the prescribed ranges for viscosity at high temperatures.

Most oils also passed all the low-temperature tests required in the SAE viscosity-grade system. But 10 brands failed to meet either the SAE standard for low-temperature viscosity or the SAE requirement for a stable pour point. We then tested a second sample of those 10. Six brands passed on second testing, so we gave them the benefit of the doubt, although we note in the Listings that our test results were variable.

We would have penalized those six oils for their variability, but we can't be sure that the other brands—the ones whose first sample passed—would have performed consistently had we tested additional samples. We simply couldn't afford to test every variation of every oil we purchased.

We have less ambivalence about the *Kendall Superb 100* 10W-40 and *GT-1 Turbo* 10W-30, the *Sears Spectrum* 5W-30, and the *Texaco Havoline* 5W-30. All failed the low-temperature tests even when we tested more than one sample. In our judgment, you shouldn't use those oils in extremely cold weather.

Motor oil is a product that changes behind its brand name almost as a matter of course. The petroleum base stock changes from time to time, and many companies also use more than one package of additives. But those variations can be controlled. You have a right to expect that every can of oil will meet the specifications on the label. It was distressing to



learn that nearly one-fourth of the oils we tested failed to meet that expectation.

Measuring viscosity breakdown

The SAE classification system has a major shortcoming—it applies only to unused oil. As a multigrade oil churns in an engine, it tends to thin out. Ads for *Castrol* oil call that "viscosity breakdown" and define it as "a loss in an oil's ability to maintain a critical protective film between the engine's moving parts."

Some of that loss of viscosity is temporary. It occurs every time you start the engine, and it's aggravated by high engine speeds. After you shut off the engine, the oil recovers. Over time, the oil is sheared down—that is, the viscosity is reduced permanently. The combination of permanent and temporary loss of viscosity may leave the oil with a film too thin to separate the engine's moving parts. Oils that are "shear stable" resist such viscosity breakdown.

Staying in grade. After checking the viscosity of the new oils, we passed them through a diesel fuel injector 20 times; that sheared down the oil permanently, just as an engine could in several thousand miles of driving.

Most of the oils were no longer within their original viscosity grade after that test, as the graphs in the Listings indicate. Of the 10W-40 oils, only the *Castrol* remained in grade. Of the 10W-30 oils, the *Castrol*, the *Exxon Uniflo*, both *Pennzoils*, and the *Valvoline All-Climate* stayed within their prescribed ranges. Of the 5W-30 oils, the *Mobil 1* (a synthetic oil), the *Pennzoil Multi-Vis*, and the *Valvoline Four Guard* stayed in grade.

Viscosity under stress. In this round of tests, we first measured the viscosity of each new oil in a special lab instrument that simulates the action of oil on the critical parts of a working engine. We held the temperature of the oil steady at 302°, typical for an engine's crankshaft bearings during hard driving. The loss of viscosity measured in this test was temporary.

We then ran a test to see what would happen once the oil had been sheared down by use and then thinned further by high engine speed and high temperature. That's a very punishing treatment for an oil's viscosity. It's like using the oil for a few thousand miles and then running the engine hard on the highway.

The 10W-40 oils held their viscosity best, overall, as the Listings show. The 5W-30 oils generally fared the worst.

The lower the viscosity of the stressed oil, the more likely the loss of a separating film between critical engine parts. Modern oils have a special additive, an antiwear agent, for just such an eventuality. Nonetheless, an oil with relatively high viscosity under stress should provide an extra margin of engine protection.

Just the facts

Important as they are, the viscosity tests don't tell the full story of a motor oil's overall performance. Oil manufacturers must run an extensive battery of tests to show that a given oil meets the American Petroleum Institute (API) standards for wear, oxidation, corrosion protection, and many other factors. Those tests are time consuming and extremely expensive—more than $44,000 for a single oil. Such testing was beyond our resources.

Instead, we asked the companies if we could look at their test data, just to be sure the tests had actually been conducted. The industry regards such information as proprietary, and we agreed not to publish the test results.

Most manufacturers complied with our request. Only Sears provided no data. Other companies sent data for what they termed representative formulations (not necessarily for the formulation we requested). What we saw indicated that the oils had been tested properly and were most likely labeled correctly.

Adding up the additives

In 1983, General Motors Research Labs analyzed 250 samples of oils from various parts of the country. The results were hair-raising: Of 41 10W-40 SF/CC oils, 40 were apparently mislabeled and were unsuitable for diesel engines. Six 10W-40 oils had a very low additive content; two others had no additives at all. However, of the 36 10W-30 SF/CC oils analyzed by GM, all but six appeared to be properly formulated.

We did a follow-up to GM's survey, analyzing our oils for the presence of several key additives. (Additives are generally included as a package, so if a few are present, most likely all are present.)

Our results were much more encouraging than GM's; all the oils we analyzed appeared to be properly formulated. We also learned that:

- Many manufacturers have more than one supplier of additives. Thus, an oil sold in New York may be different from the same brand sold in Illinois.
- Oils selling in service stations for $2 a quart are apparently no different from the same products selling in retail stores for $1 a quart.
- Some rebranding or relabeling occurs. Two identical oils may carry different brand labels.

Oils for special needs

No single oil will satisfy the needs of all car engines. Here are some of the major exceptions:

Diesel engines. Such engines require a different type of oil, one marked API CC or CD. CD is designed for more severe service than CC; check the recommendations in the owner's manual. Using an oil not designed for diesels can cause piston rings to stick. An API SF/CC or SF/CD oil satisfies the needs of gasoline as well as diesel engines.

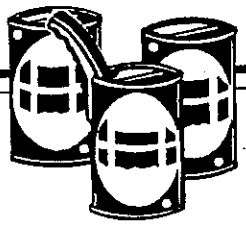
Diesels are not fond of oils with a high dosage of viscosity-index improver, so avoid oils with a wide viscosity range such as 10W-40. Low-viscosity oils also aren't recommended for diesels.

Turbocharged engines. Turbos run at extremely high temperatures, and they're lubricated by the engine oil. When the engine is shut off, oil that remains in the turbo's bearings can cook from the heat, form carbon deposits that block oil passages, and eventually destroy the turbocharger. API SF/CD oils should offer

Mobil 1: Unusual oil, unusual claims

Mobil 1 doesn't use the same sort of petroleum base stock as other oils do; instead, it uses a synthetic base derived from petroleum. *Mobil 1* has been promoted for many years for its ability to flow in extreme cold, prevent deposits, and reduce friction. Although it's quite expensive, it supposedly can be used for up to 25,000 miles.

In our tests, *Mobil 1* had excellent low-temperature flow properties, the best we saw. We can't say whether *Mobil 1* can prevent deposits or reduce friction better than other oils. But we can say something about Mobil's recommendation of a 25,000-mile oil-change interval: Don't follow it. Any oil, natural or synthetic, becomes contaminated with water, fuel byproducts, acids, dirt, and such as it's used in the engine. The only way to remove such contaminants safely is to change the oil. Note, too, that extending oil-change intervals beyond the automaker's recommendations can jeopardize a new car's warranty.



the best protection, in our judgment.

The *Castrol GTX* 10W-40 is claimed to be suitable for turbos. Texaco makes the same claim for its *Havoline Supreme* 10W-30. However, neither oil is labeled API SF/CD.

For protection against wear, a turbo engine needs an oil that can maintain a high viscosity under stress. Of the API SF/CD oils tested, we think that *Mobil 1* and *Pennzoil P-Z-L Turbo Formula* 10W-30 should give the most protection.

If you own a turbocharged car, check the automaker's recommendations. GM, for instance, recommends only two grades for its 1986 turbos: SAE 10W-30 when the outside temperature is below 40° and SAE 30 when it's above 40°.

Four-cylinder engines. Valvoline promotes its *Four Guard* as specifically designed for four-cylinder engines. Castrol says its oil is "engineered for smaller cars," though not necessarily for small engines. The advertising creates the impression that those oils fill a need the automakers haven't addressed. *Valvoline* and *Castrol* may perform well in small cars, but so will many other oils.

A word about oil supplements

The shelves of most auto-parts stores are groaning under the weight of various mysterious elixirs promising to protect your engine or cure its ills. Although we haven't evaluated most such additives, we advise against using them. We believe they might upset the delicate balance of ingredients in modern motor oils.

Recommendations

The best way to help your car last almost forever is to change the oil frequently—every three months or 3000 miles is a good rule of thumb.

No single oil can satisfy the needs of all engines under all driving conditions. First, consult your car owner's manual for the type of oil recommended for your engine. If your car dates from 1979 or before and has a gasoline engine, the manual may specify an oil in the API SE or SD service level. Use an oil in the API SF level instead. For diesels, use API CC or CD, according to the automaker's advice.

Also check the manual's chart for viscosity grades. If you have a choice, we recommend a 10W-30 oil. It can give slightly better fuel economy than 10W-40 oils, and, while under stress, can provide a thicker film between moving parts than most 5W-30 oils. As a car accumulates mileage, clearances inside the engine get bigger. The thicker film provided by a shear-stable 10W-30 oil will benefit an older engine.

The owner's manual may contain a caveat similar to this one, from the manual for the 1986 *Plymouth Voyager:* "To assure use of properly formulated engine oils, it is recommended that Mopar oils, or an equivalent that meets Chrysler Material Standard MS-6395, be used." That could lead the punctilious car-owner to pay a premium for *Mopar* oils. But what such a statement actually means is this: Look for an oil that's labeled as meeting new-car warranty requirements. Most oils carry such a label.

The limitations of our tests prevented us from rating the oils in order of overall quality. Nevertheless, we can point you to some oils in the Listings that did well in our viscosity tests. Among the 10W-30 oils, *Pennzoil P-Z-L Turbo Formula* was impressive. It's an API SF/CC, CD oil, so it's suitable for virtually all engines, although not necessarily for all temperatures. *Mobil 1* and *Pennzoil Multi-Vis* are good choices among 5W-30 oils, but the *Mobil* costs more than twice as much. *Castrol GTX* 10W-40 and 10W-30 and *Exxon Uniflo* would have been similarly impressive had all our samples met their viscosity-grade requirements.

Four oils consistently failed to meet their viscosity-grade requirements in our tests. They are the *Kendall Superb 100* 10W-40 and *GT-1 Turbo* 10W-30, the *Sears Spectrum* 5W-30, and the *Texaco Havoline Supreme* 5W-30. We don't think you should use those oils in extremely cold weather.

Once you make your choice, buy the oil for the lowest price available. Discount stores sell the same oil as service stations. Also, look for brands that carry the API symbol; it's your best assurance that the oil meets industry standards. We favor oils described as "energy conserving" in the API symbol—they help reduce friction even if they don't bring a noticeable increase in fuel economy. ■

Used engine oil: A serious health hazard

The oil you pour into your car's engine isn't particularly dangerous. But as the oil flows through the engine in the course of several thousand miles of driving, it's contaminated with the byproducts of burning fuel and changed by the heat. By the time it's drained out of the engine, oil is nasty stuff. Studies performed by the American Petroleum Institute, Shell Ltd. of Great Britain, and other industry labs indicate that used oil can cause cancer in laboratory animals.

Most of the oils we tested carry a label warning of the cancer risk and suggesting that you wash up thoroughly if you come in contact with used oil. Motor-oil containers aren't required to carry that kind of warning because new oil isn't hazardous.

But there's a far more serious question associated with used oil: How to get rid of it? Three things you *shouldn't* do are pour it down a storm sewer, toss it carelessly into the trash, or dump it on the ground. Discarded in those ways, the oil could contaminate your drinking water.

Some states have set up special collection centers or have required service stations to accept a specified amount of used oil. (When the price of crude oil is high, service stations don't generally need regulatory prodding; they can sell the used oil to processors for re-refining. But when the price of crude drops, service stations sometimes have to pay to get rid of used oil.)

Most states haven't dealt with the problem of used-oil disposal, nor has the Federal Government. The Environmental Protection Agency decided late last year that used oil should not be listed officially as a hazardous waste. The EPA's determination doesn't mean that used oil is not hazardous. Rather, as we read the EPA's ruling, it means the agency feels that no news is better than bad news. The EPA believes that the stigmatizing effect of listing used oil as a hazardous waste, along with increased regulation, would discourage the acceptance of used oil and lead to more uncontrolled dumping.

If you change your own oil, that still leaves you with a problem: What should you do with the used oil? Find out if a nearby service station will accept it. Or seek advice from the municipal department that's responsible for trash pickup or from the county or state environmental protection agency.

In areas that lack special provisions for disposal, about all you can do is pour the oil into jugs, seal them tightly, and put them out with the trash. That's far from ideal—but still better than dumping the oil on the ground.

Listings

Motor oils

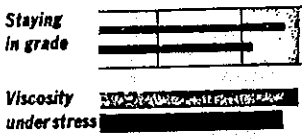
Listed by SAE viscosity grade; within grades, listed as noted. All samples tested met high-temperature viscosity requirements for their SAE viscosity grade. Except as noted, all: Met SAE standards for low-temperature viscosity, pumpability, and stable pour point; are labeled as energy-conserving and as meeting new-car warranty requirements. Prices are the average per quart paid by CU shoppers at retail stores; where two prices are given, the second is the average paid at service stations or car dealerships.

SAE 10W-40 oils

- *The following brands met all SAE low-temperature viscosity requirements for this grade, although not always on first testing (see story). Listed alphabetically.*

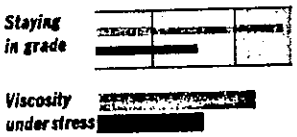
Castrol GTX Super Multi-Grade. $1.24.

API SF/CC. Labeled as meeting certain European performance standards. Not labeled as meeting new-car warranty requirements. One of 2 samples failed to meet stable-pour-point requirements for this grade.



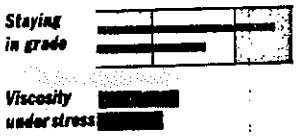
Exxon Extra. 99¢/$2.07

API SF. Labeled "saves fuel," not energy-conserving; not labeled as meeting new-car warranty requirements. Containers lack API symbol (see story). According to the company, this is being replaced by *Superflo High Performance SF/CC.*



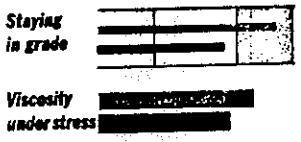
Mobil Super. $1.12/$1.59.

API SF.



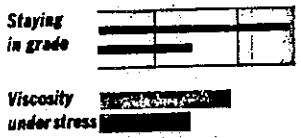
Pennzoil Multi-Vis with Z-7. $1.30.

API SF/CC.



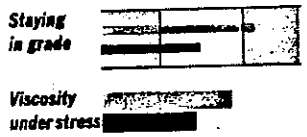
Quaker State Deluxe. $1.14.

API SF. Not labeled as meeting new-car warranty requirements.



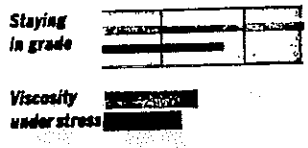
Sears Spectrum All Weather. $1.25.

API SF. Not labeled as energy-conserving.



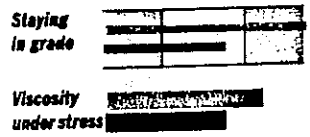
Shell Fire & Ice. $1.39/$1.75.

API SF. Not labeled as meeting new-car warranty requirements. According to the company, product now called *Shell Fire & Ice 2000.*



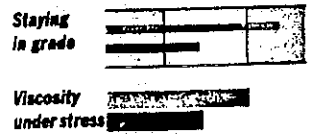
Texaco Havoline Supreme. 97¢/$2.13.

API SF.



Valvoline All-Climate. $1.09.

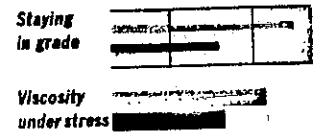
API SF.



- *All tested samples of the following brand failed to meet SAE low-temperature viscosity requirements for this grade (see story).*

Kendall Superb 100. $1.29.

API SF. Current product labeled SF/CC. Both samples failed to meet SAE requirement for stable pour-point. In our judgment, this oil should not be used in extremely cold weather where 10W-40 oils are prescribed by the automaker.

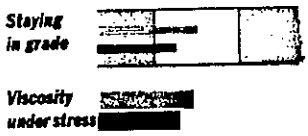


SAE 10W-30 oils

- *The following brands met all SAE low-temperature viscosity requirements for this grade, although not always on first testing (see story). Listed alphabetically.*

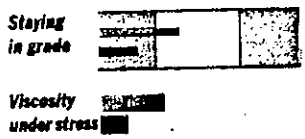
Castrol GTX Super Multi-Grade. $1.39.

API SF/CC,CD. Labeled as meeting some European performance standards. Not labeled as meeting new-car warranty requirements. One of 2 samples failed to meet stable-pour-point requirement for this grade.



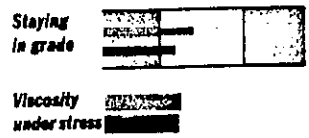
Exxon Extra. $1.23/$1.10.

API SF/CC. Labeled "saves fuel," not energy-conserving; not labeled as meeting new-car warranty requirements. Containers lack API symbol (see story). According to the company, this is being replaced by *Exxon Superflo High Performance,* SF/CC.



Exxon Uniflo. $1.40/$2.03.

API SF/CC,CD. Labeled "saves fuel," not energy-conserving; not labeled as meeting new-car warranty requirements. Containers lack API symbol (see story). According to the company, this product is being renamed *Exxon Superflo Supreme Performance,* SF/CC,CD. One of 2 samples failed to meet stable-pour-point requirement for this grade.

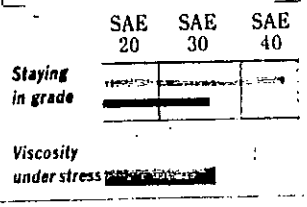


How to read the graphs

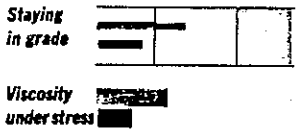
Staying in grade. This test simulated the effects of a few thousand miles of driving. The top bar represents the viscosity of new oil at 212°F, as measured according to a standard test. The bottom bar indicates the viscosity of the oil after being "sheared," as it would be in normal use. As the example shows, the vertical divisions denote the range of viscosities for SAE 20, SAE 30, and SAE 40 oils. The oil in the example lost so much viscosity that it would perform like an SAE 10W-30 oil.

Viscosity under stress. As oil passes between rotating engine parts, it loses viscosity. To simulate that, we tested each oil at 302° in a laboratory device. The top bar represents the viscosity we measured. A worst-case condition involves using the oil for several thousand miles of driving and then driving hard at expressway speeds. To simulate that, we first sheared each oil, then ran it through the lab device. The bottom bar represents the results. The longer the bars, the higher the viscosity.

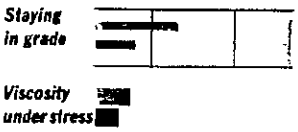
Don't try to compare the length of the two pairs of bars. The bars reflect different tests and different units of measurement.



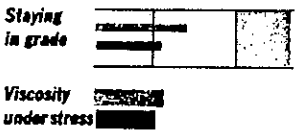
Kendall Superb 100. $1.19.
API SF/CC. One of 2 samples failed to meet stable-pour-point requirement for this grade.



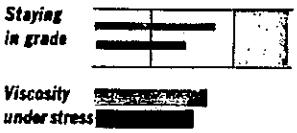
Mobil Super. $1.11/2.07.
API SF/CC.



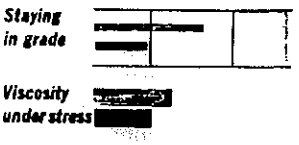
Pennzoil Multi-Vis with Z-7. $1.19.
API SF/CC.



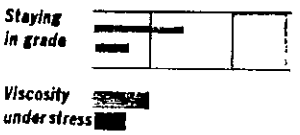
Pennzoil P-Z-L Turbo Formula. $1.52.
API SF/CC,CD. Labeled as meeting some foreign performance standards.



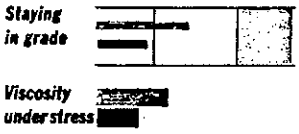
Quaker State Sterling. $1.49.
API SF/CC,CD. Not labeled as meeting new-car warranty requirements. Labeled as meeting some European performance standards.



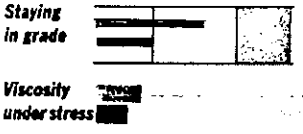
Quaker State Super Blend. $1.10.
API SF/CC. Not labeled as meeting new-car warranty requirements.



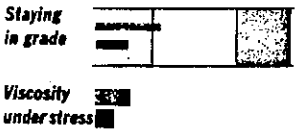
Sears Spectrum All Weather. $1.03.
API SF/CC. Not labeled as energy conserving.



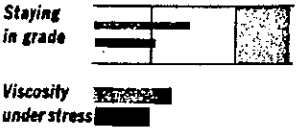
Shell Fire & Ice. $1.48/$1.90.
API SF/CC. Not labeled as meeting new-car warranty requirements. According to the company, product now called *Shell Fire & Ice 2000.*



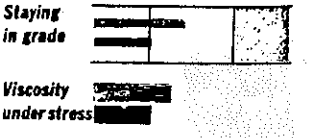
Texaco Havoline Supreme. $1.70/$2.
API SF/CC.



Valvoline All-Climate. $1.36.
API SF/CC.

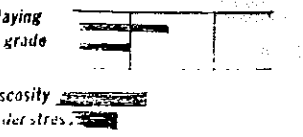


Valvoline Turbo V. $1.27.
API SF/CC,CD. Not labeled as energy-conserving.



- *All tested samples of the following brand failed to meet SAE low-temperature viscosity requirements for this grade (see story).*

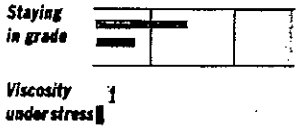
Kendall GT-1 Turbo. $1.44.
API SF/CC,CD. Not labeled as energy-conserving. Both samples failed to meet stable-pour-point requirement for this grade. In our judgment, this oil should not be used in extremely cold weather where 10W-30 oils are recommended by the automaker.



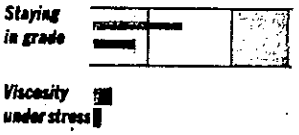
SAE 5W-30 oils

- *The following brands met all SAE low-temperature viscosity requirements for this grade, although not always on first testing. (see story). Listed alphabetically.*

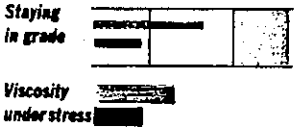
Ford Motorcraft. $2.49.
API SF/CC. Not labeled as meeting new-car warranty requirements.



GM Goodwrench. $1.65.
API SF/CC. Not labeled as meeting new-car warranty requirements.

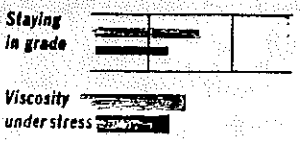


Kendall Superb 100. $1.37.
API SF. Two of 4 samples failed to meet low-temperature-viscosity requirements for this grade. Current product labeled API SF/CC.

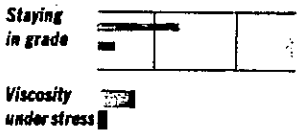


Mobil 1. $3.49/$3.21.
API SF/CC,CD. Uses synthetic base.

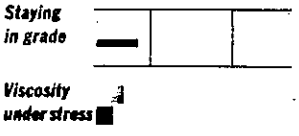
Pennzoil Multi-Vis with Z-7. $1.57/$1.50.
API SF/CC.



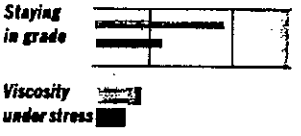
Quaker State Deluxe. $1.19.
API SF/CC. Not labeled as meeting new-car warranty requirements.



Shell Fire & Ice 2000. $2.25.
API SF/CC. Not labeled as meeting new-car warranty requirements.

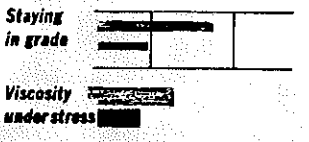


Valvoline Four Guard. $1.27.
API SF/CC. Labeled as meeting some European performance standards. One of 2 samples failed to meet low-temperature-viscosity requirement for this grade.



- *All tested samples of the following brand failed to meet SAE low-temperature viscosity requirements for this grade (see story).*

Sears Spectrum All Weather. $1.33.
API SF/CC. Both samples failed to meet stable-pour-point requirement for this grade. In our judgment, this oil should not be used in extremely cold weather where 5W-30 oils are recommended by the automaker.



Texaco Havoline Supreme. $1.37/$1.73.
API SF/CC. Four samples failed to meet low-temperature viscosity requirements for this grade. In our judgment, this oil should not be used in extremely cold weather where 5W-30 oils are recommended by the automaker.

MARKETPLACE MARKETPLACE MARKETPLACE MARKETPLACE MARKETPLACE MARKET

FOR SALE: 1971 MG MIDGET - 2nd owner, 45,000 mi., blue, wire wheels, new tires, excellent engine, leather seats, needs some body work. Price $2000. CA11 342-5176 evenings & weekends.

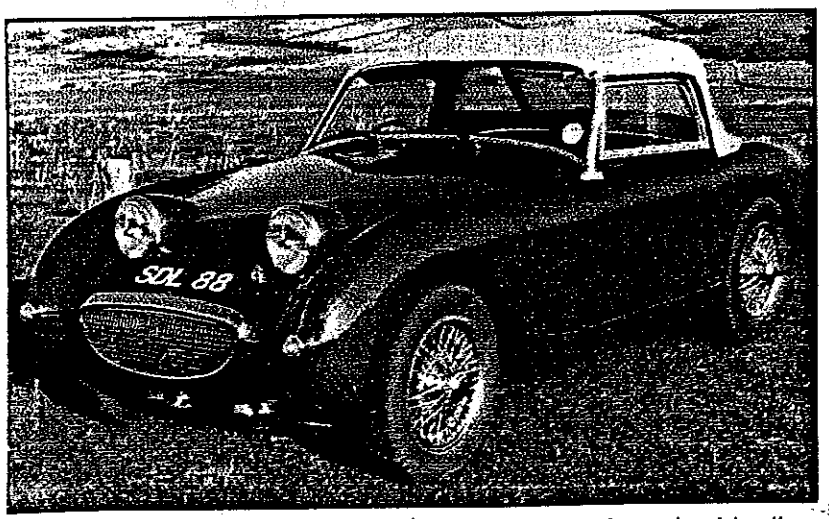
From Upstate magazine →

Bugeye looks back

RYDE, England—Bugeye's back. It was only a matter of time before Britain's kit-car industry returned to the original Austin-Healey Sprite—known in Britain as the frog-eye and here as the bugeye because of its odd headlights.

The reincarnation looks real, but is far from an exact replica. The fiberglass body rides on a galvanized square tube steel spaceframe suspended by Sprite/Midget coil and wishbone suspension at the front and a rubber-in-torsion trailing arm system behind. A donor "spridget" is sacrificed for drivetrain, steering, fuel tank and instruments.

Including chassis, suspension, body, floorpan, bulkhead and dash, the kit costs £1995, ($2900). Frogeye Car Company spent £3700 ($5365) on hardware to put the prototype on the road.



Replica Bugeye Sprite cost about $8000 including donor 'spridget'

BY MICHAEL BROWN

There's good news if you're a camera buff looking for an outlet for your pastime. That news is Camera Rochester, one of five local camera clubs. It is the only independent club, and membership is open.

The 65-member club was started in 1970 by Bing Berns and Dent Harris, who saw a need for a camera organization not affiliated with industry or academics.

"There seemed to be no outlet for amateur photographers to meet, compete and exchange ideas on photography unless you were a part of these organizations," says club president Thomas Sergent. "Camera Rochester fills that need."

The club meets on the first and third Mondays of every month at 7:30 p.m. at the Atonement Lutheran Church, 1900 Westfall Road. There is usually competition on the first Monday and a program on photography, featuring local speakers drawn from the photography profession, academics or industry on the second Monday. The cost of membership is $15 a year. That entitles you to the competitions, club events and the monthly newsletter. The club does not have darkroom facilities, but many of its members use the Community Darkroom on Monroe Avenue, and Campos Phototraphy Center on Jefferson Road.

The monthly competitions are based on topics assigned by Sergent. It works much like the reader assignment section of *American Photographer*. Some recent assignments have been to shoot wheeled vehicles, faces, reflections and things in a pair.

If you would like more information on Camera Rochester, call Sergent at 872-5924 evenings.

The yearly membership price is $12.00.

For this we offer you:

A one year membership in the INTERNATIONAL MG CAR CLUB, Western New York Centre.

12 issues of "SPOKES," our Centre's internationally famous newsletter.

Fun, fellowship, entertainment, car talk, refreshments, and door prizes at our monthly meetings.

A variety of events, such as; rallys, picnics, tours, car competitions, and parties, many of which are partially subsidized by the club.

WE INVITE YOU TO JOIN US AT ANY MEETING OR EVENT.

PLEASE FILL OUT THE FORM BELOW AND SEND IT WITH A $12.00 CHECK OR MONEY ORDER PAYABLE TO THE "WESTERN N.Y. MG CAR CLUB" to:

ANNABELLE TESCIONE
62 WILMINGTON ST.
ROCHESTER, N.Y.
14620

OR BRING IT TO THE NEXT MEETING.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

MEMBERSHIP APPLICATION

NAME_____ BIRTHDAY DATE_____

SPOUSE'S NAME & BIRTHDAY _____ ANNIV._____

CHILDREN'S NAMES & BIRTHDAY_____

_____

ADDRESS _____

CITY _____ STATE_____ ZIP_____

PHONE (___)_____ CAR(S) OWNED_____

_____

INTERESTS: RACING____ MG SERIES CARS____ AUTOCROSS____ RALLYING___

RESTORATION____ CONCOURS D'ELEGANCE____ OTHER_____

MISCELLANEOUS (hobbies, occupation, etc.):_____

_____

The yearly membership price is $12.00.

For this we offer you:

A one year membership in the INTERNATIONAL MG CAR CLUB, Western New York Centre.

12 issues of "SPOKES," our Centre's internationally famous newsletter.

Fun, fellowship, entertainment, car talk, refreshments, and door prizes at our monthly meetings.

A variety of events, such as; rallys, picnics, tours, car competitions, and parties, many of which are partially subsidized by the club.

WE INVITE YOU TO JOIN US AT ANY MEETING OR EVENT.

PLEASE FILL OUT THE FORM BELOW AND SEND IT WITH A $12.00 CHECK OR MONEY ORDER PAYABLE TO THE "WESTERN N.Y. MG CAR CLUB" to:

ANNABELLE TESCIONE
62 WILMINGTON ST.
ROCHESTER, N.Y.
14620

OR BRING IT TO THE NEXT MEETING.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

MEMBERSHIP APPLICATION

NAME_____ BIRTHDAY _____ DATE_____

SPOUSE'S NAME & BIRTHDAY _____ ANNIV._____

CHILDREN'S NAMES & BIRTHDAY_____

_____

ADDRESS _____

CITY _____ STATE_____ ZIP_____

PHONE (___)_____ CAR(S) OWNED_____

_____

INTERESTS: RACING____ MG SERIES CARS____ AUTOCROSS____ RALLYING___

RESTORATION____ CONCOURS D'ELEGANCE____ OTHER_____

MISCELLANEOUS (hobbies, occupation, etc.):_____

_____

1987 **Western New York Centre MGCC Calendar of Events** 1987

January	February	March	April
meeting	meeting	meeting 19	meeting 16
May / 17	**June** 7, 28	**July** 19	**August** 30
spring rally	7 - auto fest. 28 - Overnight in Toronto	Gymkahna & picnic	Rally & steak roast
meeting 21	meeting 18	meeting 16	meeting 20
September 11, 12, 13	**October** 24	**November**	**December** 5
Vintage Races at the Glen	Halloween Rally	Applegrove Brunch	Year End Party
meeting 17	meeting 15	meeting 19	No meeting in Dec.

SPOKES
89 Durand Drive
Rochester, N.Y. 14622

FIRST CLASS

GIL/BETTY LANGSWAGER
5311 WOODHILL CIR.
TUSCALOOSA, AL 35405

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