

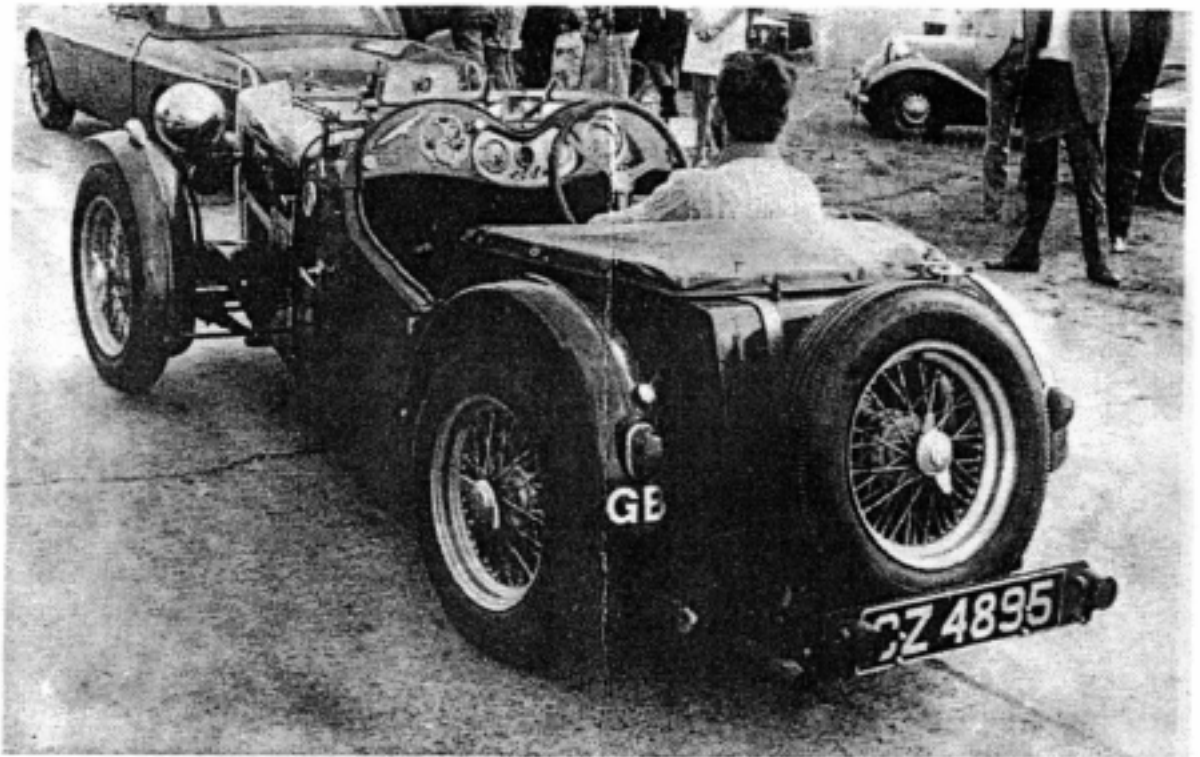


TRIPLE M REGISTER YEAR BOOK 1970

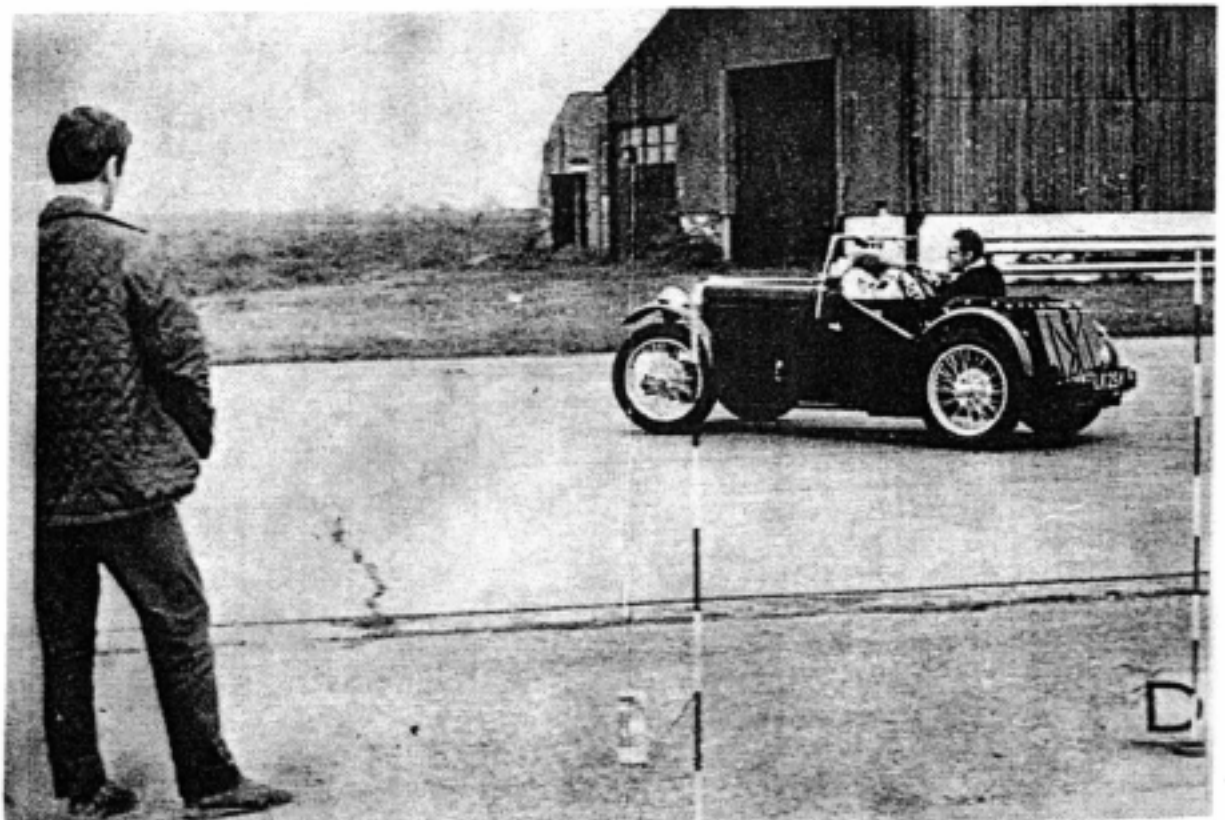


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Allan McNab's 'M' type (photo. Tony Bugbird)



John Adams Blown P/A during the 1969 visit to Holland.



Colin Smith Silverstone Driving Tests May 1969. (photo R. A. Furneaux).

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IDLE CHAT

Here is the first edition of the MMM Annual. The Committee hope that you like it, and think that this format bridges the gap between the old style Bulletin and 'Safety Fast', providing technical information unsuitable for the latter, and yet retaining some of the informality of the former.

So where are we now? The start of 1970, another year, another season. Let me start by welcoming all the new members to the Register, joining for the first time, and thanking all the 'old' ones for their renewed support.

1969 saw the first year of an independent M.G. Car Club, the formation of the new Club controlling body-M.G. Car Club Ltd- and yet another successful year of events. The Register was forced by circumstances to consider its position within the framework of the Club, which resulted in a much closer bond between parent and child, fitting for an organisation growing older, and, we hope, wiser.

The Register Committee will, at the end of 1970, offer itself to the mercy of the Register membership for the first time, and seek re-election, and at the same time offering the chance for others to be elected in their stead. Details of this Annual General Meeting will be published in 'Safety Fast' nearer the date.

Apart from this perhaps negative action, what does the committee plan for the next decade? On the sporting front - which after all is our *raison d'etre* - the mixture will be as before, with something of everything - classes in all events, and a few social gatherings for those not so actively engaged. The literary part of our functions will be dealt with as usual by the new and successful 'Infoletter', 'Safety Fast' and the 'Year Book' - all matter for inclusion should go through John Reid. Manuals, technical advice and so forth continue to be available as before from our well known friends and advisers - addresses appear elsewhere. We hope to expand our spares service as time goes on, and we

have already explored some avenues with success. Details appear in the 'Infoletter' regularly.

If you are a regular competitor, don't forget our Car of the Year Award. If you are not, I hope you will have a go anyway - you will be more than welcome.

And so all that remains is to wish each and every member a bright and successful season, during which I hope to meet most of you.

Mike Allison.

EDITORIAL

This Annual can only be as good as the material which goes into it, so if you have any complaints or suggestions - I hope the latter - write and tell me, but most useful of all would be to send me an article. Those with long memories will recall that almost all the material in this Annual has appeared either in the Bulletin or in 'Safety Fast'. I make no apology for this, since the following articles are very useful and do bear repetition. However, the responsibility for new topics rests with YOU ... with a beer in one hand and a pen in the other the words will soon begin to flow.

The Annual will be issued free to all current Register members who have paid their subscriptions, and also to all new members. Additional copies can be bought for 2/6, including postage. Advertising space will be available in future issues at very reasonable rates.

John Reid.

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STOP YOUR OLD MG

(This is an edited version of the article by Mike Allison which first appeared in the old-style 'Safety Fast')

This article covers the complete overhaul of the mechanical braking system fitted to MMM cars. Firstly, let us examine the standards to which we must aim. Unfortunately, road tests of the day were not too technical, and seldom, if ever, are actual figures for stopping distances recorded. However, reports always spoke of the MG's powerful brakes needing light pedal pressures. The following figures have been found for some models.

The Autocar (22 January 1932) testing the MG F1 four seater showed 30 feet stopping distance from 30 m.p.h. equivalent to 1g.

Motor Sport testing an L2 in November 1933 showed 1g from 40 m.p.h. while the same magazine testing an NA Magnette in February 1935 says 'as befits a car of high maximum speed, the brakes of the Magnette are extremely powerful ... Although no servo mechanism is fitted they are absurdly light in operation and this may account for the curious apparent lack of braking effect experienced by the driver. The car pulls up quickly and smoothly, even when they are applied vigorously.'

Testing the PA Midget in November, 1934, the Autocar gives a figure of 29 feet from 30 m.p.h. and 27 feet from the same speed if the handbrake was applied simultaneously.

Certainly, it is my experience that if adjusted correctly, the MG mechanical brakes are extremely good, and even by the latest standards need only fairly heavy pedal pressures from high speeds. Now why are your brakes not so good? It is never just one reason, but usually a whole host of things all adding a little to the general malfunctioning, and, in my experience, the following is a list of the more usual faults in mechanical systems:

- (a) Bad adjustment
- (b) Lack of lubrication to the cables

- (c) Wear on linings
- (d) Wear on bushes and/or pins in operating mechanisms
- (e) Cable stretches too far
- (f) Brake drums worn.

There are others, but the above are the more usual points which need to be checked. On the first of the Midgets the original braking system was rod and cable, similar to the Morris Minor, but this system, together with the transmission hand brake, was dropped in favour of the Bowden type, which is probably one of the simplest and best mechanical systems ever devised. This article will deal with the overhaul of the Bowden system in some detail, and with the final adjustment.

Preliminary Work

Before starting on the braking system itself, make sure that the suspension is in good condition. The shackle pins and bushes (trunnion blocks on the later cars) should all be in good condition. The springs should be tightly attached to the pins, and the axles to the springs. Lastly, wheel bearings and king pins should be in good order; check the steering-box and connections, and make sure that there is no play here. Faults in any of these departments will lead to bad braking, and need attention before getting down to the final adjustment.

Dismantling

Pull the whole system down to the backplates, leaving these attached to the axle. If any difficulty is experienced in removing the drums, a sharp tap with the hide end of your wheel hammer will usually suffice to break the joint. If not, a little judicious levering with a piece of copper behind the drums will - but again if there is no joy (and please do not force it) replace the wheel nut, and remove the whole hub and drum together by tapping behind the ears of the nut - don't forget to remove the hub retaining nut from the stub axle if it is a front drum which is giving trouble! Keep all components of each drum in a separate box. Pull the cables right out, and send these to Thomas Richfields Ltd via your local garage, who will overhaul them for a modest price.

Now you will probably have found that there is a glutinous mass where the rear brake linings should be, so draw the halfshafts and replace the cork oilseals, and fit new paper gaskets around the hub-bearing housing. Be very careful when replacing the corks, as these are fragile. I usually find that a smear of grease on the axle shaft and in the housing helps to make a good job here.

Attention to Brakes

After dismantling, all parts should be left in their dirty condition, but before starting the following work they should all be carefully washed with petrol. Firstly, look at the drums. These will certainly be scored but provided these are not deep they can be ignored. Check the internal diameter of the drum with a vernier gauge, and make sure that this is dead round, and also ensure that the actual braking surface is exactly perpendicular to the drum face, using a square. Now if things are not right here, you can either try to obtain another set of drums, or you can get the old ones built up by metal spray, and machined and balanced to the correct size. This will certainly be expensive, but will be money well spent. Certainly drums of MGs should not be skimmed, as this will probably result in subsequent distortion on heavy braking.

Now attention is turned to the backplates. Firstly, the pivot bushes and camshafts; these will almost certainly be worn, but if you are lucky the camshafts will be quite passable after a light dressing with a 'smooth' stone. If they are badly ridged, either fit second-hand ones which are in better condition, or have the old ones built up by welding and ground to the correct size. New bushes can be bought easily, and should be reamed before fitting to the backplate to give an easy fit on the camshaft, but with no side movement. When this is obtained slide the bush over the camshaft and gently press the whole into the backplate.

Refit the operating levers, using new Woodruff keys.

Brake linings are the next problem but these can be bought from the usual suppliers, already drilled. Make sure that they are of the correct material, details of which are given in the table below. Use of a harder material is of no advantage at all; it merely increases the pedal pressure required. With exposed brake-drums such as fitted to these early cars, brake fade is not really a problem even under quite severe conditions, since the drums have cooling air passing over them all the time, and the construction of the drums allows good conduction of heat from the linings. The linings should be riveted in place, using the correct rivet snap. Now replace all the brake shoes. A light smear of molybdenum disulphide paste on the pivot pins is a good idea, and on the camshaft and 'flat' ends of the shoe. This helps to reduce friction losses. Next, the drums are replaced, and attention is paid to the cross-shaft, and operating details.

Recommended Ferodo Linings for M.G. Cars fitted with Mechanical Brakes

<u>Date</u>	<u>Model</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Grade</u>
1929-30	M)	7.17/16"	1"	3/16"	MR
)	3.7/16"	1"	3/16"	BA.DP(H/Brk)
1931-32	M C)				
1932	D)	7.11/16"	1"	3/16"	MR
1932-33	F1 J1 J3)				
1932-34	J2)				
1933	F2 F3 L2)				
	J4)				
1933-34	L1)				
1934-35	PA NA)				
1934	QA NA)	10.13/16"	1 $\frac{1}{8}$ "	3/16"	MR
1935-36	PB NB)				
1935	RA)				
1932-33	K1 K2)				
1933	K3)	12 $\frac{3}{8}$ "	1 $\frac{1}{8}$ "	3/16"	MR
1934-35	KN)				
1934	K3)	13.5/16"	1 $\frac{1}{8}$ "	3/16"	MR

The figures for the 1934 K3 are applicable to cars fitted with the double lever brakes.

Brake Cross-shaft

The pedal and cross shaft and any intermediate levers should be removed from the frame and given a thorough wash with petrol. Be careful not to loose any of the needle roller bearings; pack them with grease and reassemble, making sure that none of the clevis pins are worn - these are very cheap, and this is not worth skimping. If the yoke ends are worn they should be drilled out to the next large size of clevis pin.

Slacken off the master adjuster screws for hand and foot brakes, and refit the cables, threading them through the chassis before attaching, first to the cross-shaft end, then to the brake lever.

Preliminary Adjustment

Leaving the car jacked off the ground, without the wheels fitted, tighten each adjuster in turn until the drum no longer revolves freely, then slacken off one whole turn of the nut. Do up the locknut. Remove the drum and smear the inside of the rubbing surface with engineer's blue. Carefully replace the drum, taking care not to touch the shoes at all, and tighten up on the hub. Now undo the adjuster locknut, and turn the adjuster until you can hear rubbing on the rotating drum, then remove the drum, again taking care not to touch the linings, and examine the surfaces. If there is an even blue film over the linings, you will be lucky! If not, file the blue parts of the lining with a coarse file, and repeat the blueing. When you can achieve a nice even blue all over the linings you have got exactly the right adjustment. It only remains now to check this for the small variations you will get owing to unequal pull in the brake cables. Replace the drums, after cleaning out all traces of blue.

Final Adjustment

Replace the road wheels and screw down the main adjusters on the cross-shaft to the stops, then turn back a fraction, say one eighth of a turn. The foot pedal should have about $\frac{1}{2}$ inch of free travel, but if not the length of the coupling rod can be adjusted to give this. Take the car off its jacks, and take it out to a quiet road, preferably on private ground, and with a loose surface.

Drive up to 15-20 m.p.h. and apply the brakes hard. From the direction and length of the skid marks you can deduce which brake is not doing enough work, and adjust this one up a little. When you have dead four-square braking your job is over. Take your car to the testing station if you wish, when 1g or 100% retardation on the handbrake should be recorded.

Routine adjustment for wear

Having got the brakes in good order, it is easy to keep them so. Lubricate the camshafts with a high melting point grease once a week (one turn of the greaser is enough, refilling this when it is hard down), and the cables at the same time with S.A.E. 140 gear oil. Grease is not to be used in the brake cables - Please!

When the pedal eventually has a long travel, adjust the main screw on the cross-shaft to restore normal travel for the pedal, and bring the handbrake adjuster up to meet this. This will probably be necessary roughly every 1500 miles, but will also depend upon how you drive. When there is no more adjustment left here, slacken right off again and readjust the brakes at each wheel independently, as above, although there is no need to go through the blueing routine again until the linings require replacing.

Given normal maintenance, carefully carried out, they should last another 30 years or so before requiring a second complete overhaul. They have already survived that long with very casual attention! (As a result of this last paragraph, and assuming that everyone attends to their brakes this year, this article will not need to be repeated until the year 2,000 ED)

VERTICAL DRIVE OIL LEAKS by Mike Allison and
Barry Linger

This article first appeared in 'Safety Fast'

The trouble with the vertical drive arises from oil leaking past the oil seals in the drain gallery, and this can be caused by a variety of reasons, mostly connected with wear.

Wear in the vertical drive shaft and general misalignment of the shaft has allowed the oil-return threads on the upper fork to wear, which allowed oil to run from the drain housing. As with most corrective work on old cars, this is best done at the time of engine overhaul, or at least decoking, as the job is much simpler with the head off.

Remove the complete drive unit, using an extractor for the fork, and clean all the parts thoroughly. Also send the dynamo for overhaul at this time; armatures are still listed in the Lucas catalogue. Send the vertical drive shaft to a reputable firm of electroplaters with instruction that it should be machined round, then hard-chromed to an outside diameter of 0.635 in. and ground back to 0.6253 in. \pm 0.0001 in. These dimensions are most important, so do not seek a 'cut-price' job. It will probably cost £3 to £4. Now purchase two Torrington roller bearings with inner races, quoting reference numbers HJ142216 and IR101416. Also purchase a replacement lip seal, or a complete conversion set as sold by Toulmin Motors and others.

It is important to check the fit of parts. Have a bar made in mild steel such that it will (using a suitable sleeve) fit through the housing in the cylinder head, and have it machined to a point at the lower end. The alternative is a hit-and-miss method which is not accurate although one of the authors has used it with success for 10 years or so. Check the fit of the fork on the dynamo armature, and that on the vertical drive shaft. Contrary to popular belief the key does not fix the fork in place this being done on the taper. The key merely guides the fork into its correct position on the shaft. Any attempt to allow the key to take the total side loads will end in disaster of one sort or another.

The correct way to check the fit is to remove the key and all traces of dirt and oil, smear a little engineers' blue on the inside of the fork, and without the key in place gently fit it onto the shaft, push home, twist through half a turn and then remove. The blue film on the shaft should be even, but if there are large expanses of 'white' metal it will be necessary to lap the fork onto the shaft using a fine grinding paste and plenty of oil, blueing at frequent intervals until even blueness is obtained over the whole mating surface. This is a tedious process, but more than worthwhile - it is vital! When a perfect fit is obtained, remove all the traces of grinding paste and blue, and fit a new Woodruff key which is a good fit on the shaft. The best plan is to take the forks and the shafts along to a good engineer's supply shop, and get the keys that fit rather than try to guess the size. Now put the dynamo in position on its platform, and bolt down. Check the mesh of the gears by rocking the fork to and fro. In all probability there will be no backlash, and you will have to remove the dynamo and fit some metal shims under the base. This will have the effect of raising the dynamo and moving the gears out of mesh. If you removed a pile of shims when you dismantled the engine, use these again. There should be a just detectable amount of play in the armature at the top for correct mesh of the gears. When this position is found, remove the dynamo again, check the thickness of the shims with a micrometer and cut a single one from 'shim-steel' to give that thickness. The fewer the number of shims the better. Should it not be possible to achieve the correct mesh with no shims then the crankshaft bevel will have to be shimmed, but this job is rarely necessary at this stage. Now fit the new bearings into the head just as the old Hyatt bearings had been and fit the oil seal into the drain housing. Replace the cylinder head, without its valve gear, and insert the bar which you have had made through the roller bearing housing. The point of this should coincide exactly with the 'pip' in the centre of the dynamo armature. If it does skip the next few paragraphs, If it does not

If the pip is forward or rearward of the point, then

the front main bearing housing will have to be removed and then replaced using a thicker or thinner gasket. In all probability this will be all right, however, and the trouble will be that the pointer is to the left or right of the pip. In this case, the bearing housing will have to be loosened, and turned fractionally until the markers coincide. It may be necessary to remove the locating pegs for the housing in order to achieve the correct amount of turn, though this is unlikely; if it is so, do not forget to repeg with a suitable size.

If you have to remove the bearing housing, be very careful as it is all too easy to scratch the bearing surface on the keys at the front of the crank. Also make up a new gasket and use a liberal smear of jointing compound before replacing. There are several such compounds on the market, but one which can be recommended is 'Hylomar' and is marketed under a BMC part number 97H 2151. The best technique is to clean all the surfaces with petrol, then spread a thin film over every surface, allow to dry for about ten minutes and then make the joint. When the joint is made wipe off the excess which has been extruded from the joint with a petrol-moistened rag.

Now remove the head and assemble the valve gear as usual. Replace the head, still without jointing, and again check the movement of the dynamo. Now remove the head again, and assemble the vertical drive unit. Do note that shims are needed between the drain housing and the head. The only accurate way to judge the correct thickness of shim is to measure the gap between the housing and the head with no shims in place, using feeler gauges, and then to select the minimum number of shims to give this thickness as was done for the dynamo base. Fit the shims in place, and bolt up the housing, but leave it dry.

Replace the camshaft, and check the end-float of the shaft and the mesh of the gears. There should be about 0.003 in. end float on the camshaft, and it is highly unlikely that this will need any attention, unless someone has messed about with the gears in any way.

Now finally fit the shaft in place, and remove and refit the drain housing using the lipseal and taking care not to damage it. Fit the bottom dynamo fork, and get it really tight, as this cannot be tightened with the head in place! Replace the head using jointing compound, and get this really tight on the block. Remove the camshaft, and refit the coupling ring. Fit the camshaft in its correct position for timing. Replace the drain pipes, etc., and all the other necessities, using compound on all faced joints.

The engine is now ready to go, and if properly assembled the vertical drive will run reliably for the life of the engine with no leaks, rattles or breakages.

Perhaps the method described here sounds complicated and somewhat expensive. The chief advantage, however, is that it is easy to do, and, once done, is cheap to maintain, and it does work. One last point: If the shaft is not really worn in the first place, then all you will need to do is to replace the oil seal arrangement and then assemble the thing properly and everything will be all right. However, if the shaft is worn, then the above method is the only permanent solution.

Here's to oil in the engine!

CAR OF THE YEAR AWARD 1970

The 'Car of the Year Award' will be competed for as last year. It is a splendid trophy awarded annually to that car which performs most creditably in the widest selection of meetings. It is decided on a points system and particularly favours the standard car - in first class original condition.

We hope that all members will compete for this, the Register's premier award, in 1970.

All points will be noted throughout the season, but the total points will be the sum of the six best scores. More than one driver may use the car, but where two cars are run in one season scores for these count separately. The Award is to the CAR, not the driver.

At any one Race Meeting you may count only two races, or one race and one high speed trial, other than this the choice of meetings is free, within the MGCC (Home Centres) Calendar. However, we are offering bonus points for attending any three of six of the most important events - these are listed below.

In the case of a tie, a seventh, eighth, event, etc, will be taken into consideration.

Where possible, scores will be taken automatically, but the onus will be on the owner of the car to make sure that his mount has its correct score. A table will be published each quarter giving scores as known. Please claim your points as soon as possible. Any claims not filed within three months of the meeting will not be considered and no claims can be considered after 31st December, 1970.

Claims to Elwin Sapcote, 11, Goodby Road, Moseley, Birmingham, 13.

Points towards the 'Car of the Year' Award for 1970 can be gained as follows -

- (a) For each event entered, started, and finished, 2 points
If classed as a non-finisher, 1 point.
- (b) In Concours events ONLY:
In addition to the two points for entering, points will be awarded to every competitor for originality.
A perfectly original car must have no major mods at all,

and will score: 5 points.

For each non-original item, one point will be deducted from this. Mudguards, wheels, etc, count as a multiplicity of the same sort of mod., and score minus one each.

The following exceptions are made -

(1) In the case of historically interesting cars, where these are in substantially the same condition as 31st December, 1939, or before.

(2) The following mods. will not be penalised -
Bucket seats.

Rear dampers on P types and N types if these are changed.
Supercharger installations, provided they are installed in a workmanlike fashion.

Replacing of steel with alloy or fibreglass, so long as the original shape is maintained.

Electric wipers may be fitted to early cars.

SU 'L' type pump may replace 'Petrolift' or 'Autopulse'.

Modern high pressure pumps will be penalised, but modern carburettors may be fitted provided they are of standard size.

Internal engine and gearbox and rear-axle mods.

All cars taking part in concours events this year will be given their bonus rating at the first meeting they attend, after which this will stand. An application for 're-rating' can be made to any committee member.

In addition: 1st place winner will gain	4 points
2nd place car	3 points
3rd place car	2 points
4th place and each competitor highly commended	1 point

(c) In driving tests, trials, rallies, autocross and sprint meetings:-

Fastest MMM time	9 points
2nd fastest MMM time	8 points
3rd fastest MMM time	7 points
etc. down to 9th place	1 point

(Continued on page 35)

CHAIRMAN'S CHAT

You should, by now, be thoroughly sick of the introductory cliches of the various MMM committee members including mine, so I thought I would start the new decade with a little psychological experiment, which can have no worse effect than the usual guff.

1969 having been an incredibly forgettable year, I won't strain myself to recall the illusory high-spots, instead let us look forward to the dreadful prospects of 1970.

The first event to avoid if you possibly can is the Salisbury Trial. There is no more certain way of getting your car plastered in grass and cow dung whilst catching pneumonia than this. Furthermore last year there was a snow storm on the way home, causing wiper motors to burn out.

Houghton Mill concours is another very avoidable meeting. Here you stand in a damp field all day contracting rheumatic fever, looking at dozens of MGs in far better condition than your own, and you can guarantee driving home feeling cold and disillusioned.

Silverstone in May will be the 40th birthday celebration of the MG Car Club; so if you are a shy retiring introvert (like me), you won't enjoy this because there will be throngs of noisy cars and throngs of noisy people, and you can guarantee nervous exhaustion or an attack of migraine. You'll probably blow your car up on the first lap of your race, and then of course there will be one of those disgusting drinking parties in the evening with real alcoholic beer ugh! ...

At the S.W. Centre autocross it usually pours with rain. Last year we were lucky we only had thick fog, though here again you get your car nearly as muddy as you do at a trial.

Then, of course, there's Beaulieu - the biggest octagonal traffic jam outside the Abingdon assembly line.

Swindon driving tests. Must be about due to break a half shaft there, and that army parade ground always scares the wits out of me. Reminiscent of National Service; 2729650 Dear SAC SIR! (Great Scot, did I

really live on 4/- a day?).

Hum, that dates him a bit doesn't it? Must be at least as old as his cream cracker.

Anything else? Ah! there's the Kimber Trial on Boxing Day, an infallible way of bringing up your semi-digested Christmas Pud. (thinks, can't have that one swarming with MMM cars trying to steal my annual bit of glory).

There must be dozens of other frightful events I've forgotten to mention, and there's always a good reason for avdding all of them if you try to think of one.

We know these events must be dreadful because 90% of our members never come to them. The reason is, of course, that we usually make the basic error of telling everybody what fun they always are, and how incredibly non-damaging they all are.

Nonsense!

The real reasons for coming are (1) The companionship of kindred idiotic spirits, (2) 'The David and Goliath' complex, i.e. the invariably vain hope of defeating tinware 30 years junior, (3) The chance of discussing mechanical problems (which one wouldn't have had if one had stayed at home) with more knowledgeable types than oneself, and (4) the curiosity value of trying to discover whether there really is another MMM car/driver combination slower or noisier than one's own.

End of psychological discourse.

O.K. so now nobody comes. Your Chairman's a failure let's face it! Never mind, that nice Mr. Wilson will be looking for a new job (pray God) around the time of the first MMM annual general meeting.

You'll deserve each other.

S.W.D.

For those who decide to enter Silverstone in spite of the rays of sunshine from our cheerful chairman, we offer the following cautionary rhyme:-

MMM LIMERICK CONTEST (continued against everyone's
better judgement)

There's doubtless a fast hairy gent,
Going quicker than you ever went,
So remember your P type
Isn't a great snorting E type,
Or you'll end up with a con rod all bent.

CONVERSATION AT MOTHER IN LAWS DAY AFTER 1968 SILVERSTONE
MEETING

Mother in law (scowling in direction of self, who is
sprawled open-mouthed snoring on her settee with one
shoe on best cushion)

"What is the matter with him?"

Wife (dutifully leaping to defence of self)

"Oh, he's suffering from Silverstone"

Mother in law (snorting)

"Well why doesn't he have an operation to have it
removed?"

As Eric Morecombe would say, there's no answer to that
is there?

S.W.D.

MARSHALL SUPERCHARGER NOTES

Stephen Dear

There appeared in MMM Bulletins Nos. 22 and 29 two articles describing the fitting of new bearings to, and the subsequent reassembly of, Marshall superchargers.

However, neither article attempted to explain the procedure for taking the dreadful things apart after you had first seized them doing 80 m.p.h. up the motorway.

Over a period of six weeks, mine was peered at by many a learned MMM Counsellor, was butchered by many a strange tool, and finally it all came apart looking very battered and butchered.

This particular specimen was an original IZ 75 pre-war job as fitted to the 1936 Cream Crackers, and it finally needed two large box spanners suitably filed down to remove the two large nuts holding the front roller races onto the shaft of the rotors.

The most baffling item was the front extension shaft which we had guessed was screwed on, but after butchering it in a most brutal manner with a Stilson wrench, we found that it was fitted on with a very tight Woodruff key (It did not unscrew)

In removing this shaft using suitable levering devices, we succeeded in making a nasty mess of the teeth on one of the herringbone gears, which has subsequently caused some pretty noisy running, despite careful dressing with a file.

The article in Bulletin 29 by Roy Perkins made several sweeping statements about Hoffman bearings not being suitable as replacements for the original bearings at the back of the rotor shafts. The explanation given was that as these bearings control the end to end float of the rotors in the casing, the use of Hoffman 125s was not recommended, as their endwise clearance was too great.

My enquiries on the subject suggest that Mr. Perkins was comparing a '1' Dot Ransome and Marles bearing with a Hoffman normal '3' Dot, instead of a '1' or '2' Dot.

Briefly, the bearings for normal use are '3' Dot, and '1' and '2' Dot (built to finer tolerances) are not so readily available, therefore blowers are often reassembled with bearings with an undesirable amount of end float, causing the rotors to foul on the ends of the casing.

I used '2' Dot R & M bearings eventually - being unable to obtain '1' Dot quickly enough, and these were far better than the worn '1' Dots which came out.

In any event, it is possible to ensure sufficient end clearance by inserting several paper gaskets between the rear bearing carrier and the main casing.

The removal of one of the front roller-bearing outer tracks proved quite impossible as it seemed to have fused itself into its aluminium housing. Such was its inaccessability that no tool in my collection could do anything except butcher the adjacent oil seal.

My general advice to anyone who has a seized Marshall blower is - find a competent engineering expert and bribe him to do it for you!

I certainly hope I never have to pull mine apart again - and although I prefer the performance of the Marshall blower, it is certainly far easier to strip and overhaul my old Centric 160, which requires no specialised tools or extremes of mechanical torture.

If you really must embark on a Marshall rebuild, I recommend reading Seymour-Howell in Bulletin 22 as well as Perkins in 29 - plus my brief hints which cover the bits they forgot!

KEEP YOUR CONSCIENCE CLEAR, AND WRITE THAT
ARTICLE FOR THE MMM ANNUAL

DO IT NOW

SPARE PARTS AND SERVICE

This list is issued in the hope that it will be of value to Register members who seek replacement parts or service for their cars. Many of the firms listed have been recommended by members who have had dealings with them, but we would ask you not to assume that inclusion in this list constitutes either a recommendation or a guarantee that any particular part can definitely be supplied; a company's stock, policy or even its staff can change overnight.

Remember that firms are offering a specialised service, and like any well-run business, they have a right to make a profit. Please, therefore, do not expect bargain prices or immediate delivery on every occasion. Some adopt the policy of making a minimum charge, so it may be worth contacting us to see if a quantity order can be made up. In any case, please let them know you are a member of the Club; some of the firms mentioned are prepared to allow a small discount to members.

If you have had good service from a firm which is not mentioned, please notify us so that they may be included in the supplementary lists which we hope to re-issue each year.

With patience and determination, it is remarkable what can still be found for a car that is 30 years old or more.

Engine and Transmission Parts Repairs

Archway Engineering Co. Ltd Spare parts
Collier Street,
Liverpool Road,
Manchester 3.

Automotive Products Ltd. Clutch and brake parts
Tachbrook Road,
Leamington Spa,
Warwick.

Associated Engineering (Sales) Ltd 123, Mortlake High Street, London, S.W.14. (Branches throughout the country)	Gaskets, pistons, piston-rings, bearings.
Baldyne Engineering Ltd Cray Avenue, Orpington, Kent.	Crankshaft balancing
British Belting and Asbestos Ltd Cleckheaton, Yorks.	Clutch and brake linings
W. H. M. Burgess Ltd. Brunel Road, London, W.3.	S. U. Carburettor repairs
Cedar Engineering Co. Ltd 4, Oak Grove Road, London, S.E.20.	Mobile engine reboring
Elephant Motors Ltd. 97, Newington Crescent London, S.E.1.	Spare parts
Farnborough Engineering Co. Farnborough, Kent.	Valves and stellinging
Fescol Ltd. North Road, London, N.7.	Hard Chroming
C. F. C. Gearboxes 33, Crayford High Street, Crayford, Kent.	Gearbox repairs and parts
Hardy Spicer Ltd Chester Road, Erdington, Birmingham, 24.	Exchange prop-shafts

J. A. Hemmings Ltd., Orchard Street, Oldbury, Staffs.	Shim Steel
Hillthorne Engineering Co. Ltd 188, Uxbridge Road, Hanwell, London, W.7.	General Overhauls
Hoffman and Burton Ltd Fairfax Works, Reading Road, Henley, Oxon.	Complete overhauls and resplices.
Hoyt Metal Co. of G.B. Ltd., Desdar Road, Putney, London, S.W.15.	Hoyt racing white metals
W. G. James, Ltd. Kingsbury Works, Kingsbury Road, London, N.W.9.	Valves
Richard Klingerit Ltd., Klingerit Works, Sidcup, Kent.	Klingerit gaskets to pattern (12 off minimum)
Laystall Engineering Co. Crankshaft Works, Tettenhall, Wolverhampton, Staffs. and 53, Great Suffolk Street, London, S.E.1.	Crankshafts and balancing; complete overhauls.
Liselott Welding Service, 9a, Broadway, Bexley Heath, Kent.	Alloy welding, and specialised repairs
Metallisation Ltd, Pear Tree Lane, Dudley, Staffs.	Metal spraying of bearings.

Midvale Engineering Ltd
Bilston Road,
Rugby, Warwickshire.

Re-boring, crack
testing, balancing

Mintex Ltd.,
67, Rothbury Road,
London, E.9.

Clutch and brake
linings

Mobile Reboring Service,
W. F. Andrews,
Gravesend 2293

Mobile engine reboring
(30 mile radius)

F. J. Payne & Son Ltd.,
Worcester Place,
Oxford.

General overhauls

S. H. Richardson & Sons
Brighton Road,
Pease Pottage, Sussex.

Spare parts (New)

and

S. H. Richardson & Sons Ltd
Moore Lane, Staines,
Middlesex.

Spare parts (second
hand)

S. U. Carburetor Co.
Wood Lane,
Birmingham 24

SU Carb. suppliers
& repairs

Herbert Terry & Sons Ltd.,
Redditch,
Worcestershire.

Valve springs

Thomsons,
106, Kingston Road,
Wimbledon, S.W.19.

Spare parts.

Toulmin Motors Ltd. 181, London Road, Isleworth, Middlesex.	Spare parts
W. H. Wilcox Ltd. Southwark House, Southwark Street, London, S.E.1.	Engineering supplies
F. B. Willmott Ltd. 36, River Street, Birmingham 5.	Starter rings
Withams, 218-220, Hersham Road, Walton on Thames, Surrey.	Spare parts
University Motors (Woodcote) Ltd. Church Street, Epsom, Surrey.	Spare parts
H. Thompson and Son. 6, Halkin Street, Leicester.	Crankshaft regrinding reboring
Sports and Vintage Motors (Shrewsbury) Upper Battlefield, Shrewsbury, Salop.	Spare parts
<u>Exhaust Systems</u>	
Burgess Products Co. Ltd Brookfield Road, Hinckley, Leics.	Silencers
Ce-last Silencers (Bolton) Ltd Leaker Street, Nr. Bolton, Lancs.	Silencers

Elm Works Ltd., Summerstown, Tooting, London, S.W.17	Vitreous enamelling
Hurst Hill Enamel Co. Ltd Biddings Lane, Deepfields, Nr. Bilston, Staffs.	Exhaust manifold vitreous enamelling
Howe Exhausts Ltd. Main Road, West Kingsdown, Kent.	Exhaust pipe to sketch or pattern
Metallic Coatings Ltd, 151, Grove Lane, Hayle, Cheshire.	Aluminium coating for exhaust systems
Servais Silencers Ltd. Ashford Works, Ashford Road, Cricklewood, London, N.W.2.	Silencers
<u>Radiator Repairs</u>	
Coles Radiators Ltd. 75, Gleach Street, Birmingham 19	Radiator, fuel tank and headlamp shell repairs.
Owen Radiators Ltd., 92, Camden Mews, London, N.W.1.	Radiator repairs
Serk Radiator Service Ltd 39, Park Royal Road, London, N.W.10.	Radiator repairs

Chassis Parts

Archway Engineering Ltd., Collier Street, Liverpool Road, MANCHESTER 3	Spare parts
W. Barford, Highfield Works, West Byfleet Corner, West Byfleet, Surrey.	General Machining
F. W. Berk & Co., Brent Crescent, London, N.W.10.	Grit blasting and metal spraying.
Benton & Stone Ltd. Aston Brook Street, Birmingham, 6.	Pipe fittings, grease nipples, petrol filters, etc.
Blaker Motor & Welding Co. Ltd. Dukes Road, London, W.3.	Chassis repairs
Britachrome Ltd. Cope Street, Birmingham 18	Hard Chrome Plating
Chassis Repairs Ltd Statham Garage, Hempstead Road, Redbourn, Herts.	Chassis repairs
Claude Rye Ltd., 921 , Fulham Road, London, S.W.6.	Bearings
Cooper & Co (Birmingham) Ltd Seeley's Road, Greet, Birmingham, 11.	Felt oil seals to pattern

Hoffman & Robinson Ltd.
 Olivers Lock,
 Canal Road,
 Bradford, Yorks.

Spare parts

Lione (Merton) Ltd.
 124, High Street,
 Merton, London, S.W.19.

Bearings, Steering
 box overhauls

London Shock Absorbers Service,
 27, Haldon Road,
 London, S.W.18

Shock absorbers
 supplied and rebuilt

W & C. Mercer,
 168, Dartmouth Road,
 London, S.E.26.

Hub Nuts re-shaped
 and re-chromed

Motolympia
 Welshpool, Mont.

Second-hand spares

Motor Wheel Service,
 71, Becklow Road,
 Shepherds Bush,
 London, W.12.

Hub nuts re-shaped
 and re-chromed

Octagon Sports Cars Ltd.
 4, Cruickshank House,
 Townsend Road,
 London, N.W.8.

Spare parts

W. Parkins Ltd.
 St. Clements Road,
 Birmingham, 7.

Leather and fibre
 washers and oil seals

S. H. Richardson & Sons Ltd.
 Brighton Road,
 Pease Pottage,
 Sussex.

Spare parts (new)

and

Moor Lane Staines, Middlesex.	Spare parts (S/H)
Thomsons, 106, Kingston Road, London, S.W.19	Spare parts
Toulmin Motors, 181, London Road, Isleworth, Middlesex	Spare parts
Universal Ball Bearing Co. 109, Hammersmith Grove, London, W.6.	Bearings
Vanderwell Products Ltd Western Avenue, London, W.3.	Bearings
Withams 218-220 Horsham Road, Walton-on-Thames, Surrey.	Spare parts
Woodhead Monroe Ltd. Moorcroft Works, Osset, Yorkshire.	Shock absorbers supplied and rebuilt
Youngs Ltd. 3, Tooting Bec Road, Balham, London, S.W.17.	Shock absorbers Supplied and rebuilt

Chassis Parts

Midland Battery & Brake Co. Kingsley Street, Knighton, Leics.	Brake linings
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Super Oil Seals and Gaskets The Factory Centre, Kings Norton, Birmingham, 30.	Oil seals and gaskets
Aucherlonies New Southgate, London, N.11.	Bearings
Foxlea Garage (Steerings) Ltd 1A, Elliott Road, Brixton, London, S.W.9.	Bishop Cam Steering boxes reconditioned
University Motors (Woodcote) Ltd. Church Street, Epsom, Surrey.	Spare parts
<u>Spring Repairs and Road Wheel Repairs</u>	
Bell Forge, Britwell-cum-Sotwell, Wallingford, Berks.	Spring Repairs
Bramber Engineering Co. Ltd Springbok Works, Waterloo Road, London, N.W.2.	Road Spring repairs
British Springs Ltd, Duaflex Works, Oldbury Road, Birmingham 40.	Road Spring repairs
Car Springs Co. Ltd. Jute Lane, Brimschaw, Enfield, Middlesex.	Road Spring repairs

Carlton Forge Ltd Edgware Road, London, N.W.2.	Road Spring and wire wheel repairs and sales
Clarkes Industries Ltd. Salina Street, Nottingham.	Wire wheels rebuild
Dunlop Wheel Co. Ltd. Foleshill, Coventry, Warwicks.	Wire wheels rebuild
G. & H. Harding, 1, North Street, Caversham, Reading, Berks.	Road Spring Repairs
Larkin Forge, Chesham, Bucks.	Road Spring Repairs
Springfield Wheel Co. 155, Springfield Road, Moseley, Birmingham.	Wire Wheels rebuilt
Standard Cycle Co. Ltd., Cambridge Street, Birmingham.	Wheel repairs and stove enamelling.
Turner & Knight, Southfield Paddock, Popes Lane, Ealing, London, W.5.	Wire wheels exchange and sale.
West London Wheel Repairs, Lancaster Road, London, S.W.19.	Road Spring and wheel repairs
Jonas Woodhead Ltd. Kirkstall Road, Leeds, Yorks.	Road Spring repairs

P. Leonard
29, Main Street,
Humberstone,
Leicester.

Spring repairs

R. P. Engineering
Butts Road,
Woking, Surrey

Hub and Wheel centre
re-splines

Bob Warner,
Sparkenhoe Street,
Leicester

Wire Wheel repairs

Motor Wheel Services Repair Co.
71, Becklow Road,
London, N.W.12.

Wheels repaired or
built 18/19"
exchange

Coachwork and Upholstery

R. Betteridge
29, Queens Gate Place Mews
London, S.W.7.

Hoods, tonneaus,
bucket seats, etc.

T. P. Colledge,
285, Slade Road,
Birmingham, 23.

Fittings, etc.

Connolly Bros
Charlton Street,
Euston Road,
London, N.W.1.

Upholstery material

W. G. Ferguson,
Bath Road Garage,
Nailsworth,
Glos.

Cycle Wings - most
widths

Hallam, Sleigh & Cheston Ltd. Widney Works, Bagot Street, Birmingham, 4	Fittings, etc.
W. A. Harrison Sadlers House, Farningham, Kent.	Hoods, tonneaus, retrimming
Hopton & Sons Ltd. Union Works, Market Harborough, Leics.	Hoodsticks (ash)
Albert Jagger Ltd. Green Lane, Walsall, Staffs.	Sundries, etc.
Mansell & Adams, Church End, Finchley, N.3.	Upholstery sundries
W. Markham Ltd., Caversham Road, Reading, Berks.	Rubber mouldings, trimming sundries, sheet aluminium, body repairs.
Motor Body Supplies Ltd 152, Shepherds Bush Road, London, W.6.	Fitting and upholstery materials
Octagon Sports Cars Ltd 4, Cruickshank House, Townsend Road, London, N.W.8.	Fibreglass panels, wings, etc.

D. W. Price & Co.,
Hove Street,
London, S.E.15

Windscreen glass

Walsall Locks & Cart Gear Ltd.,
Neale Street,
Walsall, Staffs.

Door Lock parts

Wild Boar Garage
Hilton Street,
Wolverhampton, Staffs.

Fibreglass panels,
wings, etc.

A. C. Winmill,
49, Tanstall Road,
Mitcham, Surrey.

Hoods, tonneaus, etc.

Oyler of London
237, Baker Street,
Enfield, Middlesex.

Upholstery materials

Swan Bros.
East Park Road,
Leicester.

Coach trimmers.

Tyres

Motor Master Battery Depot
138, Lower Ashley Road,
Bristol, 2.

16" 18" and 19"
tyres only

Vintage Tyre Supplies, Ltd.
5, Fryent Way,
London, N.W.9.

ELECTRICAL PARTS & INSTRUMENTS

Johnson Aronson Ltd., 229. Edgware Road, London, W.2.	Hobson telegauge fluid
Autosparks Ltd., Lime Street, Hull, Yorks	Wiring Looms
A. H. Bedford & Son, The Corn Exchange, Team Street, Tenbury Wells, Worcs.	Dial pointing
Cox & Co., Clock House Road, Be kenham, Kent.	Lucas electrical spares
Electrical Service Co (Birmingham) Ltd., 32, Lower Essex Street, Birmingham 5.	Repairs and supplies
Joseph Lucas Ltd., Birmingham 19	Exchange parts and supplies
Motor Master Battery Depot 138, Lower Ashley Road, Bristol, 2.	Batteries, electrical access- ories (stockist of 'long' MG Batteries)
J.D.O. 32, Scott Lane, West Riddlesden, Keighley, Yorks.	Electric Clock repairs
Scintilla Ltd., 20, Carlisle Road, Hendon, London, N.W.9.	Scintilla Magneto spares

Smiths Industries Limited
50, Oxgaze Lane,
Cricklewood, London, N.W.3.

Speedo Supply Co. Ltd.,
34, Shelton Street,
London, W.C.2.

Car Electrical Ltd.
High Road,
Finchley, London, N.12.

Instrument Repairs

Exchange speedo heads

Various parts, e.g.
'D' shaped rear lamps

Continued from Page 14

- | | |
|----------------------------|----------|
| (d) Race Events - | |
| 1st MMM place | 5 points |
| 2nd MMM place | 4 points |
| etc. down to 5th MMM place | 1 point |

In events where cars of younger vintage than MMM are taking part, 1 point additional will be gained for a place in the first four. In high speed trials, special awards will gain 6 points. Standard awards will gain 3 points.

(e) MMM members who marshal at meetings and use their MMM car as transport to and from the meeting will gain 2 points.

(f) Bonus points will be awarded for attendance at any three (not more, although, of course, there is no need not to go!) of the following as competitors -

- | | |
|--|--|
| 1. Houghton Mill Meeting, 2nd May | 5 points |
| 2. Silverstone Race Meeting (MMM Race only) 23rd May | 5 points |
| 3. California Cup Driving Tests and Concours, 24th May | 10 points for both
5 points for one |
| 4. Northern Registers meeting, 5th July | 5 points |
| 5. Castle Combe Race Meeting, 12th September | 5 points |
| 6. Cheddar MMM Meeting, 31st October | 5 points |

I don't really know where it all started, but I wish it had not! Perhaps it was Geoff Coles pointing out that the 'J2' did not have the same suspension as the 'J4', but when someone wrote to me the other day asking if it was O.K. to fit 'J4' type shock absorbers to a 'J2' I had a twinge of conscience, and decided to look it up. Well, I was amazed! There were no less than 22 different types of dampers fitted to various cars for various reasons. Some were fitted merely to stiffen the standard springs a bit for racing, but, in the main, whenever the spring rates were changed, then the dampers were also changed, so not only are 'J4' dampers not suitable for standard 'J2' suspension but hardly any of the Triple M dampers are interchangeable between models. Here is the list -

<u>Models</u>	<u>M.G. Part Number</u>	<u>Makers Part Number</u>
'M'	P 127	Andre
M 12/12	P 202	Andre Duplex
C front	P 289	Andre Duplex
rear	MG 650	Andre Telecontrol
D, F (all models)	P 277	Andre
J1		
J2, J3, also L1 to chassis L0620		
L2 and PA front	MG 371	Andre
J4, NA & QA front		
	only MG 531 (form A 414)	Andre Duplex
J4 rear only, and L type from chassis L0621, rear	MG 542 (form A 404)	Andre Duplex
L1 from chassis L0621, front	MG 532	Andre Duplex
K1, to chassis K0321, front	MG 402	Andre Duplex type 402
K2, from chassis K0321, front	MG 541 (form A 463)	Andre Duplex
K2, K3, front	MG 530 (form A 377)	Andre Duplex
K1, K2, K3, rear	MG 402	Andre Duplex type 006
KN, front	MG 541 (form A 463)	Andre Duplex
KN, rear	MG 560	Luvax

PB	MG 641	Andre type 506
PA, PB, rear	MG 521	Luvax
NB, front	MG 642	Andre Duplex, type 506
NA, NB, rear	MG 533	Luvax
QA, rear	MG 565	Luvax
RA, front	MG 619	Luvax
RA, rear	MG 618	Luvax

So there it is! There were one or two that were surprising to me, and may perhaps indicate why some cars corner and ride better than others. I have seen some pretty awful combinations of dampers fitted to various cars, and I hope that this will go some way towards convincing people that there was a little more science in the art of 'Road-holding', that they seem to think ... it hasn't all happened in the last ten years you know!

Incidentally, if you decide to change wheel size, it might be as well to have someone look into the suspension more thoroughly. You may spend money getting the suspension back to 'original', and then wonder why you keep breaking springs, and it might be something to do with all that extra weight you are carrying at the axle ends! In short, perhaps standard suspension requires standard wheels?

As a short story to conclude, let me say that my 'NA' was equipped with 600 x 16" tyres for the 1935 Monte Carlo Rally, and with special Luvax dampers in place on the Andre ones. I had often wondered why it would not handle with 18" wheels on the front but it was at least predictable with 16" ... now I have something of an explanation.

In answer to those who say that these cars don't handle on 18" wheels, I can only say that they could not have seen Roger Davies at Silverstone last year ... that car was one of the fastest through bends!

And with that, gentle reader, I leave you to contemplate what you are to do with your own car

Very largely the power derived from any engine comes from the cylinder head and/or valve gear. In OHV M.G. engines of 30 years ago meticulous preparation will pay dividends. This is not a job to rush through, and, to quote an example, I spend as much as up to three weeks solid work on the cylinder head alone during evenings and weekends, trying to get everything as perfect as possible - it pays!

I can pass on to you the following tips:

1. Ensure that the under face of your cylinder head is absolutely true. A good test is to take out the head studs from the block, and coat either the head or the block surface with some fine grinding paste. Place head on the block and slide it from end to end several times. Then remove the head and wipe off the paste - you can easily see where there are high or low spots on either surface. If it is too bad to correct by lapping take the head and block to a specialist and get both surfaces ground. If, however, both surfaces only have a very little difference, give them several lots of grinding paste starting at a medium grade and finishing with fine, plenty of elbow grease until you have a light grey finish all over.
2. Now is the time to check the compression ratio, by measuring the depth of the head and checking with your manual. If you feel that it could be raised you can get it planed to the correct depth at the same time as getting it true.
3. If you use a solid copper gasket, have this annealed and get it re-annealed every time you lift the head. If there is a C and A gasket and it is the first time you are stripping the engine, renew it, and every time you lift the head, check it most carefully.
4. If the valve guides are worn, and this will show up a valve 'wobble' in the guide - replace them.
5. The inlet guides NOT exhaust, can be streamlined to the shape of the inlet port by judicious use of a rotary file.

6. The inlet and exhaust ports can be polished and opened out slightly.
7. Ensure that the exhaust and inlet manifolds exactly agree with the head ports. This can best be done by making a paper template of the head and placing it on the manifold. Where there is any discrepancy grind with a rotary file. Do as much as you can on the manifold itself, but if you have to grind the head port at all, merge the joint gradually, starting at least $\frac{1}{2}$ " back.
8. Balance the combustion chambers. To do this you will have to purchase a burette from a chemist - or try and borrow one. First clean the head thoroughly, smooth the combustion chambers and then grind in the valves. Insert the plugs and valves in the head, and then place head on your bench with the under surface upwards, and get perfectly level with a spirit level. Fill the burette with paraffin to the zero mark, and hold it over one combustion chamber. Open the tap and fill combustion chamber until the liquid is exactly level with the head face. Then take your reading in c.c.s on the burette scale. Repeat on the other combustion chambers, taking a note of each reading. The largest reading is your basis to work on, and the other chambers will have to be machined or ground and polished until they are all equal.
9. Now for the valve gear. Firstly the camshaft. You will find behind the bevel gear some washers, usually two thrust washers and a belleville washer. The latter is a dished spring washer which keeps the gears in mesh. Replace this with a thrust washer of the proper thickness so that the gears have just the right amount of slack. This may mean grinding one of the washers on an oil stone. The effect of this modification is to make for more free running gears.
10. Strip the valve gear off the rocker shafts, keeping everything in exact order. Take the rockers off the eccentric bushes. Have some flat thrust washers which fit on the rocker shafts and which are roughly the same diameter outside as the distance pieces between the bushes. Working from the rear, replace each item, and when you come to an eccentric bush, see that

the oil hole coincides with that in the rocker shaft. Any discrepancy make up with your thrust washers, throwing away the belleville washers already fitted. If your thrust washer is not the right thickness, grind or add another until correct. Do not get too tight a fit, there must be some end float.

11. Assemble the rockers on to the bushes. If the rockers are badly worn, and you have an uneven set, replace them with reconditioned or new rockers.

12. Assemble the valve gear on to the head, first making sure there are no burrs on the underside of the camshaft bearing supports. See that the camshaft runs freely in its bearings, if tight, scrape the white metal until free, using marking blue, but if too loose, replace with a new set. .001 clearance is correct.

13. Measure each cam lobe with a micrometer. If there is a greater discrepancy than, say, 20 thou it would be better to have your camshaft reconditioned. To get the ultimate they should all be exactly the same.

14. Now obtain the works maintenance sheet, and set each rocker in exactly the right position in relation to the head, locking up with the pinch bolt. The P and Magnette settings differ from the J. type - this is most important.

15. Place the head upside down on the bench with the valve gear and camshaft in position. Say you are dealing with number one cylinder inlet valve, turn the camshaft until heel of cam is over rocker and guide and insert your valve in its guide. Try a feeler gauge between rocker and camshaft, and take your reading. This should be .006". If too large, grind in the valve until you get to .006", but you must remember, that you cannot grind the valve too much and it would be best to get the seat ground. If, however, there is too little clearance, or the valve does not even seat, grind the end of the stem of the valve until you get the exact .006". Repeat this with every valve.

16. Now clean up the head again, and all the valve gear. Put your valves in position with their springs and caps. First, however, check the springs on a spring tension gauge - some garages have these and will do it for you. Any weak ones should be replaced, as the idea is to get all alike.

17. Put some sealing compound - 'Wellseal' is the best - on top of the valve so that it soaks down the cotters or circlip. This ensures that too much oil does not go down the guide, as quite a lot usually collects on the top of the spring cap, when the engine is running.

18. When the head is replaced on your engine, start it up and run until it is quite warm. Then set the valve clearances to exactly that recommended by M.G.'s. In this operation, 'near enough' is not good enough, it must be exactly right.

19. When your engine has run a hundred or so miles, tighten down the head studs, more especially if a C and A gasket is used.

You will see by all this, if you have read so far, that the cylinder head is now correctly balanced. The combustion chambers are the same capacity, and the valves will have the same lift. Always ensure that you keep everything spotlessly clean when you are working on the head.

These pointers may all seem a long and hard chore, but it is well worthwhile. Every scrap of extra horse power ensured by free running and balance, especially on such small engines as Midgets, Magnas and Magnettes will count, and I feel sure that you will notice the benefit of your hard work.

Once again, if you have any queries, please write to me direct, or to the editors of this magazine, and I will do my best to answer.

GEOFF COLES

26, Bounds Oak Way, Southborough, Tunbridge Wells, Kent.

NAMES AND ADDRESSES OF AREA REPRESENTATIVES

SCOTTISH CENTRE	K. D. Patullo, 8, Ralveston House. Park, Edinburgh, 4.
N.W. CENTRE	R. Masters, 78, Derby Road, Heaton Moor, Stockport, Cheshire. J. Goodacre, 19, Albany Avenue, Eccleston Park, Prescott, Lancs.
N.E. CENTRE	J. Kidder, Denville House, Main Road, Cuthorpe, Chesterfield, Derby.
MIDLAND	P. Cranage, 11a New Coventry Road, Sheldon, Birmingham 26.
S.W. CENTRE	P. H. Peckham, 22, Woodborough Drive, Winscombe, Somerset.
DEVON & CORNWALL	N. Farnfield, 83, Darwin Crescent, Laira, Plymouth, Devon.
<u>EDITOR</u>	J. Reid, Flat 7, Lichfield Court, 2, Jerrard Drive, Sutton Coldfield.

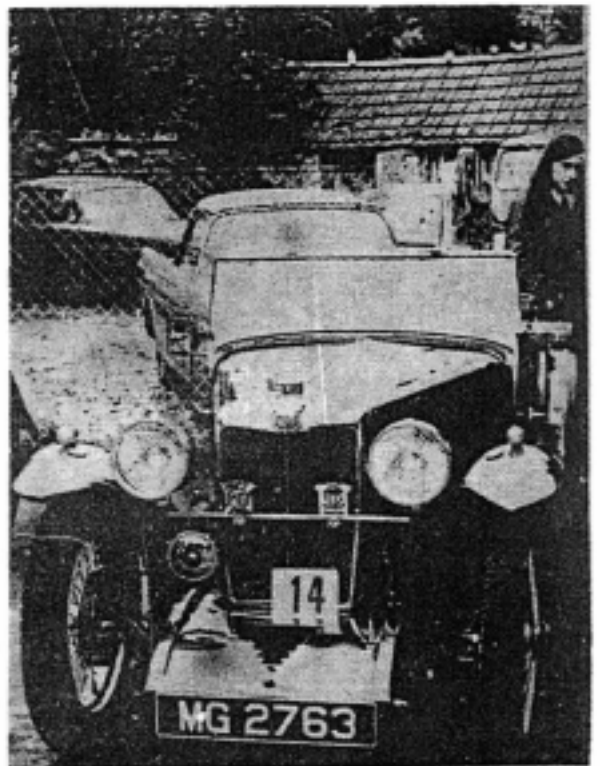
Spaces are available for advertisements.

For details contact the Editor.



'MMM' Car of the Year 1969. Charles & Steven Shepstone winning the Nutexa Trophy with their PB in the Boxing Day Kimber Trial.

Alan Simpson's J2 winning the Concours at Cheddar.



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