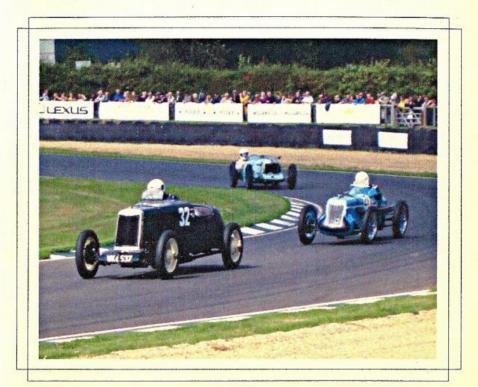
## PRIPERIO RECISUAR BULLING



### OCTOBER 2006





Norfolk Weekend - Our cars fill the car park at Caister Hall, in foreground
Bob Hudson's C-type and Alan Hogg's ND
Photo: Dick Morbey



Five C-types ready for the test hill at the Brooklands Open Day
Photo: R. Chamberlain

# TRIPLE-M REGISTER BULLETIN

### October 2006

EDITORIAL - Phil Bayne-Powell e-mail philippp@mgcottage.freeserve.co.uk

The Norfolk Triple-M rally over the Bank Holiday weekend was a great success, and very well organised by Mike Linward and his helpers, who we thank most sincerely for their hard work The gala dinner on the Saturday was probably worth the trip alone it was so good!

We even attracted Christian Hoeptner from Germany, and Jorgen Sjontoft from Denmark with his lovely red PB – he had read about the event in the Bulletin and wanted to see for himself what our rallies were all about. He went home with a trophy for coming 3<sup>rd</sup> in the big cam 4-cylinder class of the Pride of Ownership. It was also nice to see John Hancock (J2) over here again from New Zealand, but with a MGA this time. He had joined us for our Prescott weekend in 2004 in his J2.

Team B-P went up with the NA Allingham, and the ND for Colin Butchers to drive, as he was going to be MGB mounted otherwise. He was passengered by Bryan Ditchman, who is still recovering from his recent operation, but he hopes to be back in action for the trials season, with D'Artagnan.

It was also very nice to see Mike Allison in the M-type Sportsman's Coupe that he had restored for an American customer. The latter wanted the car to be built as a 12/12 Replica replica, but Mike persuaded him to rebuild it with the original Coupe body, which was largely there. The car attracted much more interest than if it had been another replica; it is also original, which in my book is much worthier. I am afraid I do not agree with people who say that they can do what they like with their own car. We are custodians of these cars, which are now all over 70 years old, and we have a responsibility to maintain the Triple-M Heritage.

Front Cover: Mark Piercy and his R-type at the Goodwood Revival meeting in September (photo; G.Holdsworth)

We are looking for a new Librarian to take over from the Hayters; please let George Eagle know if you are interested.

The Goodwood Revival meeting saw four of our cars in action in the Brooklands Trophy for pre-war cars. The track was wet on the Sunday race day, which kept speeds down.

Mark Piercy in his R-type came in a creditable 3<sup>rd</sup>; he was faster than Tom Dark in his Q-type copy, who spun and didn't finish. Peter Green had a good race in his Seaman K3, and finished about mid-field. Howard McGuire unfortunately couldn't start the race due to a damp magneto on his K3, which was a shame.

This Bulletin will be with you late in the month, as Rosemary and I will be in America from 1<sup>st</sup>-23<sup>rd</sup> October on the Triple-M New England Raid (so don't expect any responses to your e-mails!). We have had to finish all the work before we go, with the insides being printed while we are away. The covers we shall print off before we go, so that it is all ready to put together on our return.

## John James MMM & 'T' Spares

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\*\*\*\*\*NEW! Front and rear trunnions for road springs only £2.75 each!\*\*\*\*\*

\*\*\*\*\*NEW! Valve springs (doubles) £30/£45 a set 4/6 cylinder engines\*\*\*\*\*

\*\*\*\*\*NEW! P/N/L Valves made from 214/N with plasma nitrided stems £14 each \*\*\*\*\*

The cars are now on their way across the Pond as I write this. Eight Triple-M cars are joined by two Vintage MGs (including the editorial 14/40 to be driven by Martyn Phillis). Three of the cars are M-types, which one wouldn't have thought were ideal cars for touring. We will have a van (courtesy of Frank Allocca) to transport our luggage around, so saving having to pack it all into a small car every time we move hotels. We shall give you a very full report of this event in coming issues. Bob Hudson has been a tireless organiser, and it has required far more paperwork than 15 years ago, when the last Raid took place.

The C-type continues to throw oil out of the back of the block/bellhousing joint, but I just keep filling up the sump after every run! It goes pretty well on the carburettors, but it really needs its new Powerplus blower fitted, which will be done over the coming months.

Our M-type has been having problems with overheating, so I took it to Southern Carburettors for them to set it up on their rolling road. They found that the jet was badly worn, and the adjuster nut wound up to compensate. With the carburettor rebuilt, they tuned it up to give 40% more power, and more importantly, it now has a very flat torque curve, whereas before it tailed off dramatically. It now can accelerate very rapidly from 60mph, and gives modern cars something to think about! So far the overheating hasn't reoccurred.

Our ND misbehaved itself on the first day of the Norfolk weekend, when it wouldn't start on the Saturday morning, despite having driven up the previous day without problems. We changed the condensor and the rotor arm, and cleaned up the points and all the distributor parts, but still it wouldn't go. I then changed the rotor arm for a second spare we had in the Allingham, and it burst into life.

We had swopped the good rotor for a faulty (spare) rotor at the same time as we had replaced the faulty condensor for a new one, so cancelling out the effect of the new condensor. The moral of this is to change only ONE item at a time, and also to have a spare that has been checked out as working. I therefore replaced the spare coil and petrol pump on the Allingham for America, keeping the ones that were working as the known spares.

Our F-type is currently stalled awaiting its engine, while the N-type saloon should be back fully upholstered in the next few weeks; it has 9

items left to do, so should be running by Christmas.

### The Triple-M Register Norfolk Weekend, August 2006.

From Colin Butchers

One can hardly have failed to notice that the Register's main event for 2006 took the form of a great gathering of Triple-M cars in deepest Norfolk over the August Bank Holiday week-end, from the 25th to the 27th August.

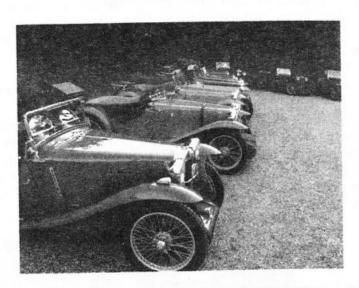
Thus it came to pass that 26 Triple-M cars of sundry shapes and sizes (plus their owners/keepers/spouses/partners etc) made their way to the Caistor Hall Hotel in the village of Caistor St.Edmund, a mile or so south of Norwich. Peter Green was hoping to bring the "Aramis" NE, but was busy getting his K3 ready for the Goodwood Revival meeting. The Registrar's Cresta NB was still having dynamo problems, and Bryan Ditchman was still recovering from his recent operation, so didn't bring "D'Artagnan". Dick Morbey's PA was leaking water from a cracked block, whilst lan MacKay's K1 was also misbehaving.

Christian Höptner from Germany came to the event as intended, although sadly without his J2, whose engine had decided to misbehave in many departments. Colin Wallace kindly gave him a ride in his PA, and Christian reported coping quite well with the agoraphobia occasioned by this larger car. On the Sunday, Christian was seen in the "back seat" of the Editorial NA Allingham, sampling the delights of 6-cylinder motoring.

The location of the event attracted locals, John and Lou Shorten in their nicely presented F1. Also present on Friday night was Jim Rawlings, a long time Triple-M owner, but slightly incapacitated now, following a stroke, he drives an MGB GT Automatic.

At this point, yours truly made his first mistake (of several, it should be said) in thinking that Caistor St.Edmund was the same as, or close to Caister-on-Sea, which it isn't. As a result I booked into a hotel in Great Yarmouth, where the staff have looked after me well on other occasions, only to find that instead of the two mile journey I was expecting, I had a twenty-two mile journey from Great Yarmouth to Norwich - to be made at least twice every day!

The gathering commenced on the evening of Friday the 26<sup>th</sup>, with initial registration at Caistor Hall, presided over by John and Katie Reid, followed by a glass of supper, and a very appetising finger buffet.



Some of the attending cars in the Caister Hall car park

The formalities were then followed by a motoring flavoured film show, conducted by Michael Linward. In keeping with the period theme, Mike projected them through an 8mm projector with its fragile tungsten light source. Luckily all the splices remained intact, and we were able to enjoy a variety of entertainment, including material shot by John Reid at VSCC Goodwood driving tests in 1984, featuring Fran Ernst's KN Tourer, now owned by Rolf Ditter in Germany. Also competitive driving at MGCC events at Wiscombe and Prescott, and much other MG-specific material, some contributed by John Reid.

It was nice to see many of the faces and cars, which still grace our meetings these days, although some of the haircuts looked distinctly dodgy! A number of the drivers seen no longer turn up to our gatherings, and it took me several days before I could recall their names. That's old age for you. We also viewed a rare and amusing American road safety cartoon film made in the 1930s, using the then new 'three strip'

Technicolor process. The evening finished with a showing of a Bob Godfrey cartoon film — "Instant Sex" - providing further evidence, if it were needed, that Triple—Mers do not have one-track minds.

Our mental faculties were further stimulated by a somewhat punnish pre-decimal currency quiz, devised by Mike. Predictably this favoured "those of a certain age" and at last laid to rest the myth that " the young know everything"!

After the film show all present adjourned to the bar with the sole exception of myself, as I had to start the second of my twenty-two mile journeys.

The following morning, we all gathered in the Hotel car-park and at the appointed time, I had the great honour of flagging all the cars off at one minute intervals, using the largest Union Jack flag that money could buy. Actually, the flag has great Triple-M significance, as it is the very same flag that was used on the historic Millbrook record breaking session in 1984.



The M-type Sportsman's Coupe needing some outside assistance

Before I commenced my flag-waving duties, I was instructed by my riding-mechanic Bryan Ditchman to assist him in starting the ND, which had been generously made available to me by its owner Philip Bayne-Powell, and after one very encouraging, but brief burst of activity, the engine stopped, and simply refused all attempts to restart it. Philip took over and for the next three-quarters of an hour, he cleaned and adjusted contact breaker points, replaced condensers and did most of the other things that one does to encourage cars to run, with no success whatever.

We were just on the point of giving up the task, when he decided to fit a new rotor arm, despite having fitted a spare one already. The engine then burst into life, and I am delighted to say that from then on the car

ran perfectly for the rest of the weekend.

By this time all of the cars, comprising Mike and Anne Allison's M-type Coupe, Bob and Sandra Hudson's C-type, 4 J2s, 11 P-types, one each of F1, K1 and L1 models and 8 N-types of various shapes and styles, had left the hotel, accompanied by the lovely MGA of John and Brenda Hancock, and the only slightly less lovely MGFs of Dick and Gill Morbey, and Bob and Amanda Clare, whom we had allowed graciously to join in the fun, as their Triple-M cars were ill.

The morning tour took us through over sixty miles of very rural Norfolk, along narrow lanes and through fords, which I am sure Mr Constable would have recognised from his painting days, (yes, I know he came from Suffolk, but I am sure you know what I mean) and I was very glad to be accompanied by Bryan Ditchman, who it must be said is

an ace decipherer of Tulip Diagrams.

Added interest was provided by an observation test, which required drivers and navigators to spot 12 pictured churches, and to note their names. Most people probably passed this test, but many failed it because of lack of precision, or illegibility of their replies. Mike was obviously aiming for high standards! This part of the Norfolk landscape was surprisingly hilly, and John Shorten's F1 found the going rather tough in places, as it preferred to run on only four of its six cylinders. By dint of plug changes and roadside encouragement, he was able to press on and completed the event.

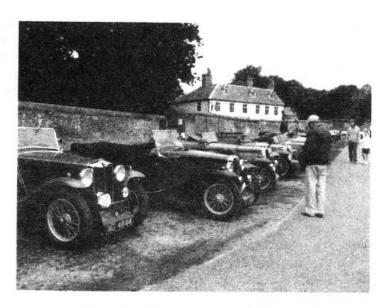
In the fullness of time, and after encountering several dozen tractors (both the Chelsea variety and proper ones), and at least one loaded

tourist coach, on some of the narrowest parts of our route, we drove into the car-park of the King's Head, Bawburgh, where coffee and bickies were available for the drivers, and something a tad stronger for the non drivers.

After our morning break, we resumed deciphering the Tulip Diagram for a somewhat shorter period, until arriving at Blickling Hall, near Aylsham, which is one of the stately homes of old England, now owned and looked after by The National Trust. At Blickling, we had the exclusive use of the orchard car park at this splendid Jacobean property. Here we had time to relax in the 55 acres of gardens, and to tour the hall, which for a time had been the home of the Boleyn family.

All of the cars were lined up in one of the well manicured parts of the grounds, and we were then free to wander round the house and gardens, grab something to eat in the cafeteria, or squeeze into the local pub for a swift half.

The collection of cars looked magnificent, and proved a great draw for the many visitors to Blickling Hall, and much photography and general chatting took place.



N-types head the line-up at Blickling Hall

Towards the end of the afternoon we were free to wend our way back to Caistor Hall to sign off and retire to our various hotels to clean teeth, change shirts and generally prepare ourselves for the Celebration Dinner to be held in the evening. As one who has attended many Celebration Dinners over the past hundred years or so, I can honestly say that this was probably the best of all. The service was excellent, and the standard of cuisine genuinely first class, whilst we were entertained visually by a display of photographs of our driving efforts projected onto a large screen, which could be seen by all. The photography and projector were organised by young Neil Mackay, to whom we extend our grateful thanks.

After the meal and coffee, Mike Linward ably assisted by our President's wife, Ann Allison, presented awards to George Ward, the winner of the previous night's quiz, to the winning navigators of the observation quiz, and to the winners of the pride of ownership competition, and to those who had travelled the greatest distance to be in Norfolk. Mike Hawke responded on behalf of all present, thanking Mike and his team of helpers including Keith Hall, John Reid and Ian MacKay. Apart from us Southerners, there were a pleasing number, who had driven up from the West Country, but the most applause went to Christian Hoptner, who had travelled over from Germany, to John and Brenda Hancock, who are over in the U.K. with their MGA, on an extended holiday from New Zealand, and especially to Jorgen Sjontoft and Vini Kroyer, who had popped over from Denmark with their beautiful PB for the week-end.

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After the dinner I am sure that the bar was well attended late into the evening, but your idiot scribe had to embark on his sixth journey down the road to Great Yarmouth.

Perhaps because of our attention to the churches on the previous day, Sunday morning dawned bright and clear, and 23 of our cars lined up for a photo shoot outside the hotel. We then set off through the lanes south of Norwich to Forncett Steam Museum, some 8 miles from Caistor Hall as the crow flies, but about 26 as the Tulip Card takes you.

Forncett is a remarkable place, consisting of a number of converted farm buildings, now housing an amazing collection of static steam engines, some of which have considerable historical importance, ranging from a large beam engine, once used for pumping water out of Cornish tin mines, to a much younger twin cylinder engine, which was designed to raise the lifting bascules of London's Tower Bridge. Most are in working order, and are powered by steam raised in two large vertical boilers, which were in the process of being fired up when we all arrived.

Very soon a number of the engines were operating, but the engine which I most wanted to see working, an enormous three cylinder device as tall as a house, once used for pumping water to the City of Norwich, steadfastly refused to run. This engine has its own small "donkey engine" (now assisted by an electric motor) to power the enormous crankshaft and flywheel when starting, but although it wanted to go, the "donkey" could not get the crankshaft over top dead centre. The engineers then noticed that steam pressure was in fact dropping, rather than increasing, and they traced the problem to a lack of water in the vertical boilers - not a good thing to happen with steam boilers. The problem was soon rectified (someone turned the tap on!) and soon steam pressure increased and the giant flywheel began to turn. For me the most impressive thing was the virtual silence in operation, despite the enormous size and power output of the device, with the only sound being a deep regular thump, which might have been a nasty crack in the crankshaft, or more likely the valves (probably the size of dustbin lids) opening and closing.

Towards the end of the afternoon, a number of the Triple-Emmers said their goodbyes, and turned for home, whilst the lucky ones amongst us returned to their hotels to enjoy one more day in Norfolk. On returning to Caistor Hall Hotel reluctantly to give the ND back to Philip, your stupid

scribe made his second error. On negotiating the roundabout before turning into the narrow lane leading to the hotel (a move I had already done about eight times by now), I suffered momentary brain fade, and made to turn into the exit lane of the bypass, instead of the lane to Caistor Hall, which was about ten yards further on. To those drivers coming out of the exit lane, could I say, sorry chaps and I hope that your sphincter muscles are now fully recovered.

Apart from the reluctance of the ND to start on Saturday morning, the only other problems of which I am aware, are John and Lou Shorten's F1, which suffered a persistent misfire, which John attributed to the Japanese sparking plugs mysteriously increasing their gaps, and Andrew Morland's L1 which was also showing signs of a misfire, which Andrew was afraid might be the onset of a blown head gasket. Also on Sunday morning Terry Hartley's NB proved reluctant to start, and this was diagnosed as a faulty condenser, which was put right quickly with the assistance of Terry Andrews.

All in all an excellent week-end amongst good friends, and my sincere thanks to the organising team for a job well-done, to Philip for his generosity in providing the ND, and to Bryan for his excellent navigating.

When's the next one? (Next year's big event is the weekend of 15th-17th June, which, incorporates the centenary celebrations of Brooklands – Ed.).



### **Pride of Ownership Results**

### Class 1 - 4-cylinder, small cam.

| 1 <sup>st</sup> | Mike Allison | M-type     | GG 3949        | 23 points |
|-----------------|--------------|------------|----------------|-----------|
|                 |              | Sportsman  | n's Coupe      | •         |
| 2 <sup>nd</sup> | Bob Hudson   | C-type     | JK 1932        | 22 pts    |
| 3 <sup>rd</sup> | Keith Hall   | J2         | <b>AGY 339</b> | 20 pts    |
| 4 <sup>th</sup> | John Reid    | J2/s (J4 R | (ep) JY 1146   | 14 pts    |
| 5 <sup>th</sup> | Mike Hawke   | J2         | DG 5405        | 13 pts    |
| 6 <sup>th</sup> | Mike Linward | J2         | JL 753         | 12 pts    |

### Class 2 - 4-cylinder, large cam.

| 1 <sup>st</sup> | Derek Richards  | PA/s | RC 3349 | 31 points |
|-----------------|-----------------|------|---------|-----------|
| 2 <sup>nd</sup> | Roger Davies    | PA   | BU 8079 | 25 pts    |
| 3 <sup>rd</sup> | Jorgen Sjontoft | PB   | K 4512  | 22 pts    |
| 4 <sup>th</sup> | Paul Duncombe   | PA/s | BLB 209 | 21 pts    |
| 5 <sup>th</sup> | Terry Davies    | PA   | VL 5643 | 16 pts    |
| 6 <sup>th</sup> | Alex Reid       | PA   | MG 3848 | 11 pts    |
| 7 <sup>th</sup> | Bill Cullen     | PA   | ATO 387 | 8 pts     |
| 8 <sup>th</sup> | Colin Wallace   | PA   | EO 5823 | 6 pts     |
| 9 <sup>th</sup> | Roger Thomas    | PA/s | WP 5939 | 4 pts     |
|                 |                 |      |         |           |

### Class 3 - all 6-cylinder cars

| 1 <sup>st</sup>  | Alan Hogg         | NB           | MG 4844        | 24 points |
|------------------|-------------------|--------------|----------------|-----------|
| 2 <sup>nd</sup>  | Peter Lee         | NA           | TJ 6409        | 23 pts    |
| 3 <sup>rd</sup>  | Bill Bennett      | NA           | HH 8103        | 21 pts    |
| 4 <sup>th</sup>  | Terry Hartley     | NB           | <b>DUB 679</b> | 18 pts    |
| 5 <sup>th</sup>  | Colin Butchers    | ND/s         | <b>BKL 265</b> | 17 pts    |
| 6 <sup>th</sup>  | Rosemary B-Powell | NA Allingham | <b>BYU 271</b> | 14 pts    |
| 7 <sup>th</sup>  | Terry Andrews     | ND/s         | MG 3281        | 13 pts    |
| 8 <sup>th</sup>  | John Shorten      | F1           | IA 9830        | 10 pts    |
| 9 <sup>th</sup>  | Andrew Morland    | L1           | OD 6008        | 8 pts     |
| 10 <sup>th</sup> | George Ward       | K1/s         | APC 950        | 7 pts     |

## **Touring Quiz**

|   | 10011115   | =                          |
|---|--|----------------------------|
| 1 <sup>st</sup> Class award<br>John Reid<br>Terry Davies<br>Roger Thomas    | Katie Reid<br>Freda Davies<br>Rosemary Thomas                | J2/s<br>PA<br>PA/s         |
| <b>2<sup>nd</sup> Class</b> Philip B-Powell Derek Richards Colin Wallace    | Rosemary B-Powell<br>Rosemary Richards<br>Christian Hoeptner | NA Allingham<br>PA/s<br>PA |
| <b>3<sup>rd</sup> Class</b><br>Andrew Morland<br>Terry Hartley<br>Peter Lee | Katherine Morland<br>Susan Hartley<br>Caroline Lee           | L1<br>NB<br>NA             |
| <b>4</b> <sup>th</sup> <b>Class</b><br>Roger Davies<br>Bill Bennett         | Barbara Ford<br>Liz Bennett                                  | PA<br>NA                   |
| <b>5<sup>th</sup> Class</b><br>George Ward<br>Mike Hawke<br>Alex Reid       | Jo Ward<br>Anne Hawke<br>Sarah Reid                          | K1/s<br>J2<br>PA           |
| 6 <sup>th</sup> Class<br>Terry Andrews<br>Jorgen Sjontoft                   | Margaret Andrews<br>Vini Kroyer                              | ND<br>PA                   |
| 8 <sup>th</sup> Class<br>Bill Cullen  | Joanne Cullen  | PA                         |
| 9 <sup>th</sup> Class<br>Bob Hudson   | Sandra Hudson  | C/s                        |
|   |  |                            |

10th Class

Mike Allison Anne Allison M-type Sportsmans coupe

Paul Duncombe Valerie Duncombe PA/s

Rodney Collins PA John Shorten Lou Shorten F1 Alan Hogg Marjorie Hogg NB

Colin Butchers Bryan Ditchman ND/s

Please note that our secretary, George Eagle's e-mail address has changed to geagle2@dsl.pipex.com

Please also note that we are looking for a new librarian to replace Charlie and Jackie Hayter who wish to stand down

## MMM NEWS 2006

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# Triple-M Weekend Event, 15th-17th June 2007.

This event, the Triple-M Register's main event for 2007, has been timed to coincide with the start of the Brooklands Centenary celebrations on Sunday, 17<sup>th</sup> June 2007. The hotel base for this Triple-M weekend is located a ten minute drive from the historic town of Windsor, and about a twenty minute drive from the Brooklands Track and Museum, and has enough rooms to accommodate everyone who wants to attend.

The weekend will start during the afternoon of Friday, 15<sup>th</sup> June, with the registration of entrants. During the evening, after dinner, there will be a film show, which will include some Brooklands films. This will be followed on the Saturday morning with a leisurely drive through the Chilterns to Waddesdon Manor, which belongs to the National Trust.

Following a relaxing time looking around the house, which contains a vast collection of art and furniture, as well as the renowned Victorian gardens and the rococo-style aviary, we will return to the hotel for the evening Gala Dinner.

On the Sunday morning a short drive, of approximately 20 minutes, will take us to the Brooklands Track and Museum, where we will be able to enjoy all the activities of their Centenary celebrations. We hope to include a drive in your Triple-M car around as much of the original circuit that remains today, linked with other roads to make a circuit.

The Brooklands Museum is both a motoring and aviation museum, and most of the exhibits are pre-war, but there are many post war aeroplanes, including a Concorde, which you can go in and look around.

This will be a spectacular event and should not be missed, we especially hope to see as many overseas Triple-M cars as possible joining us for this historic weekend. Remember that The 17th June 1907 was the actual day when the Brooklands track was first opened for racing, 100 years ago.

Later this year entry forms will be available via the Triple-M Register's website. But in the meantime, we invite you to register your interest in attending the event (with no obligation), by contacting one of the joint organisers of the event, Paul Duncombe at <a href="mailto:Dduncombes@aol.com">Dduncombes@aol.com</a> or Keith Leaver at <a href="mailto:keithrbleaver@aol.com">keithrbleaver@aol.com</a>

### **FUTURE EVENTS FOR 2006**

27-29th October International Classic Car Show at the NEC

4th November Triple-M Annual Dinner 01628 665055

12th November S.E.Centre Autumn Trial 01689 853635

Elizabeth Taylor will be sending out details of the Triple-M dinner to all those who attended the Chairman's open day. The dinner will be held at the Steventon House Hotel as last year, at £22.50 a head, and Elizabeth needs to know your choice of food from a pre-selected menu which will be sent to all showing interest in attending; her telephone number is the one shown above.

C.O.T.Y. 2006 To 9<sup>th</sup> September

| Position          | Register<br>Number | Car             | Registration Mark | <u>Driver/s</u>                              | Points |
|-------------------|--------------------|-----------------|-------------------|--|--------|
| 1 <sup>st</sup>   | 691                | NA<br>Allingham | BYU 271           | Rosemary Bayne-Powell<br>Philip Bayne-Powell | 98     |
| 2 <sup>nd</sup>   | 3                  | J2              | DG 5404           | Mike Hawke                                   | 85     |
| 3 <sup>rd</sup>   | 3315               | L1/s            | TAS 513           | Rod Stansfield<br>Wayne Stansfield           | 68     |
| 4 <sup>th</sup>   | 909                | J2-PA/s         | FW 3909           | Bill Bennett                                 | 64     |
| 5 <sup>th</sup>   | 2070               | J2/s            | JY 1146           | John Reid<br>Fred Boothby                    | 60     |
| 6 <sup>th</sup>   | 1140               | J2              | JL 753            | Mike Linward                                 | 59     |
| - 7 <sup>th</sup> | 1976               | J2/s            | JF 5278           | Gil Collins                                  | 55     |
| 8 <sup>th</sup>   | 1460               | J2              | AGY 339           | Keith Hall                                   | 50     |
| 9 <sup>th</sup>   | 1428               | NA/s            | Bellevue Spl.     | lan Baxter                                   | 48     |
| 10 <sup>th</sup>  | 2695               | J1-J2/s ss      | -                 | Anthony Howat<br>Garth Howat                 | 47     |
| =11 <sup>th</sup> | 397                | M 12/12         | SC 9559           | James Peacop<br>Alex Peacop                  | 45     |
| •                 | 2200               | C/s             | RX 8306           | Philip Bayne-Powell                          | 45     |
| 13 <sup>th</sup>  | 341                | М               | PJ 7970           | David Rushton                                | 44     |

| 14 <sup>th</sup><br>=15 <sup>th</sup> | 2134 | K1/s         |                |   | 43 |
|---------------------------------------|------|--------------|----------------|---|----|
|                                       | 538  | NA           | NV 4207        | Oliver Sharp                                | 42 |
|                                       |      |              | (50.00)(50.00) | David Sharp                                 |    |
|                                       | 949  | L1           | OD 6008        | Andrew Morland                              | 42 |
| •                                     | 1804 | PA           | MG 3848        | Alexander Reid                              | 42 |
| 18 <sup>th</sup>                      | 2141 | PA/s         | RC 3349        | Derek Richards                              | 40 |
| 19 <sup>th</sup>                      | 2193 | NB           | DUB 679        | Terry Hartley                               | 38 |
| 20 <sup>th</sup>                      | 108  | M            | OU 4824        | Mark Dalby                                  | 36 |
| 21 <sup>st</sup>                      | 1187 | PA           | EO 5823        | Colin Wallace                               | 34 |
| =22 <sup>nd</sup>                     | 317  | Jarvis M     | GP 1856        | Annette Bayne-Powell<br>Philip Bayne-Powell | 32 |
| •                                     | 1595 | М            | PG 1045        | Frank Ashley                                | 32 |
| 24 <sup>th</sup>                      | 920  | PA/s         | TG 8337        | George Ward                                 | 30 |
| =25 <sup>th</sup>                     | 2011 | K2/s         | JO 7531        | John Dutton                                 | 29 |
| •                                     | 676  | PA/s         | WP 5939        | Roger Thomas                                | 29 |
| =27 <sup>th</sup>                     | 1931 | C/s          | VD 30          | Barry Foster                                | 28 |
|                                       | 609  | PB/s         | ARY 614        | Mike Dowley                                 | 28 |
| =29 <sup>th</sup>                     | 2000 | K3/s         | MG 3570        | Peter Green<br>Andrew Taylor                | 26 |
|                                       | 1997 | NA           | MG 3271        | James Brice                                 | 26 |
| 31 <sup>st</sup>                      | 3202 | PB/s         | HS 8860        | Peter Plaskitt<br>Mark Boldry               | 25 |
| =32 <sup>nd</sup>                     |      | PA/s         | -              | Mike Painter<br>Alan Painter                | 24 |
| •                                     | 348  | M            | VU 4037        | James Mumford                               | 24 |
| •                                     | 3420 | PA           | BMH 34         | Andrew Bradshaw                             | 24 |
| =35 <sup>th</sup>                     | 968  | PA           | BU 8079        | Roger Davies                                | 23 |
|                                       | 1659 | PA           | VL 5643        | Terry Davies                                | 23 |
| 37 <sup>th</sup>                      | 534  | NA           | HH 8103        | Bill Bennett                                | 22 |
| =38 <sup>th</sup>                     | 2721 | PA           | BMF 540        | John Saward                                 | 20 |
| •                                     | 162  | ND/s         | BKL 265        | Philip Bayne-Powell<br>Colin Butchers       | 20 |
| •                                     | 3399 | PB           | K 4512         | Jørgen Sjøntoft                             | 20 |
| 41 <sup>st</sup>                      | 3017 | J1 Salonette | UG 3585        | Jim Collier                                 | 19 |
| =42 <sup>nd</sup>                     | 2175 | PB           | JB 7524        | Pat Boghossian<br>Andrew Taylor             | 18 |
| •                                     | 81   | C/s          | JK 1932        | Bob Hudson                                  | 18 |
| •                                     | 2686 | NB           | MG 4844        | Alan Hogg                                   | 18 |
| •                                     | 1112 | M Coupé      | GG 3949        | Mike Allison                                | 18 |
| =46 <sup>th</sup>                     | 1428 | J2           | DG 6142        | Nick Benger                                 | 16 |
|                                       | 2361 | NA/s ss      | EP 5892        | Robin Butler                                | 16 |
| •                                     | 1773 | ND           | MG 3281        | Terry Andrews                               | 16 |
| 49 <sup>th</sup>                      | 664  | PA/s         | BLB 209        | Paul Duncombe                               | 15 |

| =50 <sup>th</sup> | 156  | K1/s      | APC 950        | George Ward                | 14  |
|-------------------|------|-----------|----------------|----------------------------|-----|
|                   | 741  | PA        | ATO 387        | Bill Cullen                | 14  |
| 52 <sup>nd</sup>  | 1501 | J2/s      | HY 8219        | Mark Piercy<br>Alan Barker | 13  |
| =53 <sup>rd</sup> | 1367 | PA/s      | MG 3921        | John Wells                 | 12  |
|                   | 1164 | PA        | YSV 703        | Hamish McNinch             | 12  |
| =55 <sup>th</sup> | 605  | L1/s      | MG 2802        | Charles Jones              | 11  |
|                   | 1888 | NA        | CGJ 295        | Richard Last               | 11  |
|                   | 3070 | K3/s tc   | MG 2525        | Richard Last               | 11  |
| •                 | 2761 | K1/s      | MG 2794        | Paul Mullins               | 11  |
|                   | 3063 | F1        | IA 9830        | John & Lou Shorten         | 11  |
| =60 <sup>th</sup> | 212  | NE        | JB 4750        | Peter Green                | 10  |
| 4                 | 815  | KN/s      | MG 4314        | Martin Warner              | 10  |
|                   | 600  | J2/s      | WJ 7070        | Ken Robinson               | 10  |
| =63 <sup>rd</sup> | 1537 | PA/s      | LV 8989        | Patrick Gardner            | 9   |
|                   | 2789 | PA        | VYC 529        | Keith Jackson              | . 9 |
|                   | 1823 | PA        | WO 9320        | Terry Andrews              | 9   |
|                   | 3247 | J2        | OY 7444        | John Greer                 | 9   |
|                   | 3235 | F1        | PJ 4659        | Bob Walker                 | 9   |
| *                 | 1971 | F2        | WM 8548        | Terry Wilson               | 9   |
| -                 | 633  | NA        | LAS 368        | Tony Hay                   | 9   |
|                   | 233  | M         | UF 8788        | Con French                 | 9   |
|                   | 943  | PA        | MG 4124        | Rodney Collins             | 9   |
| =72 <sup>nd</sup> | 1521 | C/s       | RX 8591        | Dave Cooksey               | 8   |
| -                 | 1917 | J1/s      | VSV 521        | Stuart Evans               | 8   |
| -                 | 705  | PA        | <b>AVP 342</b> | Derek Moore                | 8   |
| *                 | 209  | J4/s      | AGP 291        | Dave Cooksey               | 8   |
| -                 | 2231 | J3/s      | YG 4293        | David Kempton              | 8   |
| 77 <sup>th</sup>  | 1486 | K3/s      | JB 3181        | <b>Howard Maguire</b>      | 7   |
| =78 <sup>th</sup> | 1463 | NA/s      | BUU 964        | David Downes               | 6   |
| •                 | 3148 | L1/s      | MG 2468        | Pat Boghossian             | 6   |
|                   | 3298 | PA/s      | OSL 309        | Stuart Procter             | 6   |
| =81 <sup>st</sup> | 2816 | K1/s      | RD 5278        | Bob Pattison               | 5   |
| •                 | 2891 | M         | SV 8647        | Peter Relph                | 5   |
| =83 <sup>rd</sup> | 2715 | KN/s      | CG 8379        | <b>Edward Cottam</b>       | 4   |
|                   | 1270 | NB Cresta | MG 4750        | Bob Clare                  | 4   |
| •                 | 3225 | М         | PJ 795         | Richard Bishop-Miller      | 4   |
| =86 <sup>th</sup> | 1533 | PA-PB     | WV 5012        | Dick Morbey                | 2   |
| •                 | 1925 | PA        | BPG 994        | Bob Clare                  | 2   |
| •                 | 158  | PA        | <b>BJO 800</b> | Peter Down                 | 2   |
|                   |      |           |                |                            |     |

|                   | 3009 | J2         | AGO 497        | Peter Hemmings  | 2 |
|-------------------|------|------------|----------------|-----------------|---|
|                   | 148  | M          | OY 1548        | John Haine      | 2 |
| -                 | 3147 | PB         | -              | Kevin Richmond  | 2 |
|                   | 3131 | PA         | BNA 710        | Ray Masters     | 2 |
| =92 <sup>nd</sup> | 2077 | K1-KN/s ss | -              | Annie Templeton | 1 |
|                   | 65   | PA/s       | <b>DPH 228</b> | Nigel Gibbons   | 1 |
|                   | 1591 | J2         | YJ 892         | David Stansbie  | 1 |

Results from the following events are the only ones currently included in the 2006 COTY scores to date:

| 7 <sup>th</sup> Jan  | uarv   | MCC Exeter Trial                                 | <b>Full Results</b> |
|----------------------|--------|--|---------------------|
| 15 <sup>th</sup> Ja  | nuarv  | VSCC Brooklands New Year Driving Tests           | Full                |
| 22 <sup>nd</sup> Ja  | nuary  | MAC Clee Hills Trial                             | Partial Resul       |
| 5 <sup>th</sup> Feb  | ruary  | Stroud & District MC Cotswold Clouds Trial       | Partial             |
| 18 <sup>th</sup> Fe  | bruary | Fell Side Auto Club Northern Classic Trial       | Partial             |
| 18 <sup>th</sup> Fe  | bruary | VSCC Exmoor Fringe Trial                         | Full                |
| 4 <sup>th</sup> Mar  | ch     | VSCC John Harris Trial                           | Full                |
| 25 <sup>th</sup> Ma  |        | VSCC Herefordshire Trial                         | Full                |
| 26 <sup>th</sup> Ma  |        | MGCC SE Centre Spring Naviscat                   | Partial             |
| 8 <sup>th</sup> Apri |        | VSCC Silverstone Race Meeting                    | Full                |
| 8th Apr              | il     | MGCC SE Centre Nescot Autotests                  | Full                |
| 9th Apr              | il     | MG Day at Brooklands                             | Partial             |
| 15 <sup>th</sup> Ap  | oril   | MCC Land's End Trial                             | Full                |
| 15 <sup>th</sup> Ap  | oril   | 750MC Easter Egg Naviscat                        | Partial             |
| 22 <sup>nd</sup> A   | pril   | MGCC SW Kimber Classic Trial                     | Full                |
| 23rd Ap              | oril   | MGCC SW Kimber Classic Driving Tests             | Full                |
| 29th Ap              | oril   | VSCC Northern Rally                              | Full                |
| 30th Ap              | oril   | MGCC Caledonian Concours                         | Partial             |
| 30th Ap              | oril   | VSCC Curborough Sprint                           | Full                |
| 1st May              | v      | MGCC Caledonian 3-Day Rally                      | Full                |
| 1 <sup>st</sup> May  | v      | MGCC SW Wessex Sprint                            | Partial             |
| 1 <sup>st</sup> May  | v      | Basingstoke CCC 'Popham Airfield' Rally          | Partial             |
| 7 <sup>th</sup> Ma   | v      | MGCC Atlantic Coast Run                          | Partial             |
| 14 <sup>th</sup> Ma  | av     | MG Regency Run                                   | Partial             |
| 14 <sup>th</sup> Ma  | av     | VSCC Wiscombe Park Hill Climb                    | Full                |
| 21st Ma              | av     | Triple-M Flat Cap & Whippet Weekend              | Full                |
| 2 <sup>nd</sup> Jur  | ne     | Jersey Festival of Motoring Victoria Ave. Sprint | Full                |
| 3 <sup>rd</sup> Jur  | ne     | Jersey Fest. of Motoring Westmount Hill Climb    | Full                |
| 3 <sup>rd</sup> Jur  | ne     | VSCC Harewood Hill Climb                         | Full                |
| 4th Jun              | ne     | Jersey Fest. of Mot. Mount Bingham Hill Climb    | Full                |
| 4th Jur              | ne     | MGCC SW Centre Charmy Dowm Gymkhana              | Partial             |
| 24th Ju              | ine    | MGCC Silverstone International Race Meeting      | Full                |
| 24th Ju              | ine    | MGCC Silverstone California Cup Driving Test     | Partial             |
|                      |        |  |                     |

| 25 <sup>th</sup> June                   | MGCC Silverstone Gymkhana                   | Partial |
|---|---|---------|
| 25 <sup>th</sup> June                   | MGCC Silverstone Pride Of Ownership         | Partial |
| 25 <sup>th</sup> June                   | MGCC Silverstone Sprint                     | Full    |
| 25 <sup>th</sup> June                   | VSCC Loton Park Hill Climb                  | Full    |
| 23 <sup>rd</sup> July                   | MGCC SW Dorset Day Out Rally                | Partial |
| 5 <sup>th</sup> /6 <sup>th</sup> August | VSCC Prescott Hill Climb                    | Full    |
| 6 <sup>th</sup> August                  | MGCC SE Weald & Downland POO                | Full    |
| 6th August                              | MGCC SE Weald & Downland Gymkhana           | Full    |
| 6 <sup>th</sup> August                  | MGCC SE Weald & Downland Driving Tests      | Full    |
| 26 <sup>th</sup> August                 | Triple-M Norfolk Weekend Pride of Ownership | Full    |
| 26 <sup>th</sup> August                 | Triple-M Norfolk Weekend Observation Rally  | Full    |
| 9th September                           | MGCC SW Wiscombe Park Hill Climb            | Full    |
| 9 <sup>th</sup> September               | BSN Silverstone Race Meeting                | Full    |

## SPEED CHAMPIONSHIP 2006 To 9<sup>th</sup> September

| <b>Position</b>   | Car/s     | Driver/s           | <b>Points</b> |
|-------------------|-----------|--------------------|---------------|
| 1 <sup>st</sup>   | K3/s, PB  | Andrew Taylor      | 24            |
| 2 <sup>nd</sup>   | J2/s, PA  | Fred Boothby       | 23            |
| 3 <sup>rd</sup>   | K1/s      | Peter Fenichel     | 20            |
| 4 <sup>th</sup>   | C/s       | Barry Foster       | 18            |
| =5 <sup>th</sup>  | K2/s      | John Dutton        | 17            |
| •                 | NA        | James Brice        | 17            |
| 7 <sup>th</sup>   | L1        | Andrew Morland     | 15            |
| =8 <sup>th</sup>  | NA        | George Rozwadowski | 14            |
| 66                | L1/s      | Charles Jones      | 14            |
| =10 <sup>th</sup> | М         | Alex Peacop        | 13            |
|                   | PB/s      | Mike Dowley        | 13            |
| =12 <sup>th</sup> | NA/s      | Robin Butler       | 12            |
| 44                | K1/s      | Henk de Vries      | 12            |
| 14 <sup>th</sup>  | C/s, J4/s | Dave Cooksey       | 11            |
| =15 <sup>th</sup> | PB, L1/s  | Pat Boghossian     | 10            |
| 64                | NE, K3/s  | Peter Green        | 10            |
| и                 | NA, K3/s  | Richard Last       | 10            |
| 44                | J2/s      | Pete Tinknell      | 10            |
| =19 <sup>th</sup> | L1/s      | Rod Stansfield     | 9             |
| *                 | J2/s      | Ken Robinson       | 9             |
| 21st              | J1/s      | Stuart Evans       | 8             |

|                   | PB/s | Peter Plaskitt        | 7 |
|-------------------|------|-----------------------|---|
| 4                 | J3/s | Dave Kempton          | 7 |
|                   | PA   | Andrew Bradshaw       | 7 |
| 25 <sup>th</sup>  | C/s  | Oliver Richardson     | 6 |
| =26 <sup>th</sup> | NA/s | Oliver Sharp          | 5 |
|                   | F1/s | Arjn van Gelderen     | 5 |
| н                 | PB/s | Mark Boldry           | 5 |
|                   | K1/s | Paul Mullins          | 5 |
| u                 | KN/s | Andy King             | 5 |
| u                 | K3/s | <b>Howard Maguire</b> | 5 |
| и                 | PA/s | Mike Painter          | 5 |
| u                 | NA/s | David Downes          | 5 |
|                   | KN/s | Edward Cottam         | 5 |
| u                 | J2/s | Gil Collins           | 5 |
| u                 | K1/s | Robert Pattison       | 5 |

## SLADE TROPHY 2006 To 9<sup>th</sup> September

| Position          | Car/s   | Driver/s             | <b>Points</b> |
|-------------------|---------|----------------------|---------------|
| 1 <sup>st</sup>   | J2-PA/s | Bill Bennett         | 21            |
| 2 <sup>nd</sup>   | M       | <b>David Rushton</b> | 11            |
| 3 <sup>rd</sup>   | PA/s    | George Ward          | 10            |
| 4 <sup>th</sup>   | KN/s    | Martin Warner        | 9             |
| 5 <sup>th</sup>   | PA/s    | Patrick<br>Gardner   | 8             |
| 6 <sup>th</sup>   | PA/s    | John Wells           | 7             |
| 7 <sup>th</sup>   | J2      | Keith Hall           | 6             |
| 8 <sup>th</sup>   | J2      | Mike Linward         | 5             |
| 9 <sup>th</sup>   | J2      | Tin Beckh            | 4             |
| =10 <sup>th</sup> | PA      | Colin Wallace        | 3             |
| ш                 | J2/s    | Colin Bird           | 3             |
| 12 <sup>th</sup>  | PA      | Derek Moore          | 2             |
| 13 <sup>th</sup>  | J2      | Nick Benger          | 1             |

### Metal Fatigue

By Paul Duncombe C.Eng M.I.M.M.M

Fatigue leads to fracture under repeated or fluctuating stresses having a maximum value less than the ultimate tensile strength of the material. Fatigue generally occurs at loads that when applied statically would produce little noticeable effect.

I have often heard fatigue being described as due to the fact that, "the metal has crystallised because it so old". This is some way off being the truth. The fact is, that metals which we generally come across as car drivers, are already polycrystalline when new. If we were discussing jet engine turbine technology, we could include single crystal structures, but let's stay with cars. What lies behind the often catastrophic consequences of fatigue cracks?

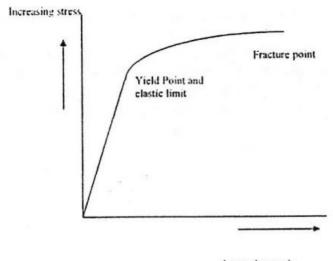
First, let's dispose of the crystallising bit. When molten metal is first cast into a mould, as a precursor to manufacturing a component, the metal solidifies as it cools. It starts to solidify at a large number of points within the molten mass, depending partly on the rate of cooling. This is called nucleation. Atoms of the metal, or metals in the case of alloys, will link up atomically and form a structure, a crystalline form, dictated by the metal itself, which typically can be, but is not limited to, body centred cubic (bcc) and hexagonal close packed (hcp) forms. example iron forms a bcc structure. In this there are four iron atoms at each corner of a cube, with one sitting in the middle of it. Aluminium forms an hcp structure, where aluminium atoms unite to form stacked hexagons, with an aluminium atom at each of the corners of the hexagon, and one in the middle. individual crystals are called grains, and the edges (randomly shaped), are called grain boundaries. (One branch of metallurgy, metallography, examines grain structure using a powerful optical microscope directed at a finely polished and etched surface; and what intricate structures they can be!)

A cast metal contains crystals, which have been inhibited from continuous growth by meeting up with other crystals growing in opposite directions. Our brand new metal casting is already crystallised. In a cast metal, the number and therefore the ultimate size of the grains, is dependent on the number of nucleation sites. A casting will often have a variable grain size across it, since the molten metal in contact with the mould material is often cooled comparatively rapidly (providing large numbers of nucleation sites and giving a finer grain structure), in relation to the inner mass of metal (which will have fewer nucleation sites, and a coarser grain structure). Generally speaking, the greater the number of grains per unit volume, the greater the strength of the metal, although many other factors influence strength as well.

How does a fatigue fracture start? Three things need to be present to initiate failure by fatigue. There must be an alternating load (stress), there must be a tension load (tensile stress), and there must be some permanent deformation (plastic strain) on an atomic level initially.

It is not difficult to imagine car components, which are subject to alternating loads; axles, steering components, crankshafts, teeth on crown wheels and pinions, are some. In all these applications it is easy to see how the tensile loads are developed. It is much less easy to see how plastic deformation, or strain, can be produced when after each use the component appears the same as before, and performs the same as when we last switched off the engine.

Whilst subjecting a tensile test specimen to an ever increasing load up to the fracture point, a graph can be produced of stress against strain. The figure below shows the principal features. The ultimate tensile strength is the maximum stress supported by the specimen just before fracture.



Increasing strain

With increasing load the specimen stretches elastically up to the yield point. The stress is trying to pull the atoms from their established positions, but without success. At any point to just below the yield point, the specimen will return to its original size if unloaded. Beyond the yield point the metal starts to deform plastically, and would not return to its original size if unloaded.

The increase in stress shown during the plastic deformation stage is due to an effect known as work hardening, which means that increasing stress is required to continue to move the dislocations (see below) within the crystals.

So, how is the localised plastic strain produced in fatigue? The first part of the answer is, "on an atomic scale to begin with". We have to think in terms of atoms of a metal, and the crystal structure within the grains. The crystals contain distinct planes, or layers, where the density of atoms is much higher than in other planes in other directions. These so-called close packed planes, or slip planes, slide over each other relatively easily

when a stress is applied, compared to other directions within the crystal lattice.

Even so, if only complete layers were present from one side of the grain to the other, it would be difficult to deform the material. That the close packed planes of atoms can slide relatively easily, is due to the movement of dislocations. These are faults in the crystal lattice, where an extra line of atoms is interposed in the ordered crystal structure. Movement of these dislocations allows the metal to deform. The lack of dislocations in carefully produced single crystal structures (remember the reference to turbine blades above) is one factor which allows them to have such high strengths, compared to their polycrystalline relations. A simple illustration of atoms and dislocation movement is shown below.



All the close packed slip planes are randomly oriented within the casting, or specimen cut from it. Obviously a tensile stress will exert maximum shear stress on those slip planes which are placed at 45 degrees to the tension axis. Under an alternating tensile stress, a ratcheting effect can occur between two or more of these slip planes, whereby intrusions and extrusions are formed at the surface. Some dislocations move to the outside surface, and a defect can be formed.

Repeated applications of stress will finally form a microcrack at the surface, resulting in a slip plane fracture, which at this point is very small ,and not enough to affect strength. Cracks in a component will give rise to an intensification of local stress at the crack tip. The intensification level will depend on the sharpness of the crack. The crack starts to grow with each cycle of stress. As the crack grows, the stress per cycle increases, even under constant loading, due to the remaining sound material having a decreasing area. The speed of crack propagation increases as the crack itself grows.

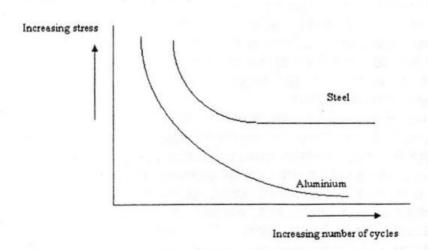
The following illustrates the importance of a stress raiser, albeit in a very dramatic example of brittle fracture, but it does show that stress raisers such as cracks, or even design faults resulting in notches, having a similar effect as cracks, can be significant.

The Liberty ships, which America started producing during WWII, were supposed to be an advance in terms of construction, in that the plates of the hulls were welded onto the frames, rather than being riveted as before. The steel for the plates was not of the highest quality. Hitherto it was not unknown for a plate to crack, but with the riveted construction, the crack could only propagate across the single plate, and replacement was easy. Whilst the USS Schenectady was docked at San Diego, the hull split completely in half. A microcrack had started in a welding defect (producing a stress intensifier) at a hatchway. Bit by bit, the crack had grown, until it reached a critical length, suddenly the crack then travelled right around the hull; so much for stress raisers! Other Liberty ships suffered the same fate, until the brittle fracture susceptibility of the plates was reduced.



Notches are dangerous too in applications where other fatigue factors are present. It is the reason that the undersides of critical bolt heads are rolled and radiused, where the head meets the shank, to avoid a notch, and therefore a potential stress raiser. Look at the undersides of modern big end bolt heads. All aircraft bolts have forged and rolled heads.

Performance of a metal in fatigue is commonly measured by applying a given stress cyclically to a test piece, and counting the number of cycles before fracture occurs. By using a large number of test pieces, and applying a different stress to each, a curve can be drawn to show how the fatigue life, in number of cycles, is affected by the level of stress for a given metal/alloy. These are called S/N curves. The production of S/N curves for steel and aluminium show one major difference. Steels will typically have a stress below which fatigue will not occur; aluminium on the other hand will always fail in fatigue eventually, if it is given enough stress cycles. This effect can be seen in the graph below. The typical number of cycles in such tests ranges from 10,000 to 10,000,000 plus.



Typically the fractures caused by fatigue grow inward, with a curving front from the initial defect, often allowing the original defect to be precisely located. These so-called striations are typical of a fatigue crack. This cracking can proceed along grain boundaries, or through the grains themselves. In both cases the fracture surface morphology, or appearance, has a fine, almost smooth texture.

Finally, after repeated cycles of stress, the remaining cross section of metal is unable to withstand the overall applied load, and fails, usually suddenly. At this point, the final fracture surface, sometimes heavily ridged with evidence of gross distortion, is markedly different to that of the fatigue crack surface, which is often crystalline in appearance, and probably gives rise to the false application of the term "crystallised"!

There are processes, which can extend fatigue lives, apart from the obvious one of reducing surface tensile stress. Since maximum stresses occur at the surface, any surface treatment, which reduces their effect, are beneficial. Polishing the surface is a means of attempting to eliminate minute stress raisers, which might assist in propagating a crack. If a steel surface can be artificially put into compression, then more stress will have to be applied before the surface is placed in tension. This has the effect of reducing the net tensile stress, which will extend the cycles to failure, or might even, in the case of a steel, avoid a fatigue failure altogether.

Two examples of this surface treatment are nitriding, and shot peening. Nitriding introduces nitrogen, often from ammonia, into the hot steel surface, where it forms iron nitrides. The iron nitrides increase the hardness, by blocking dislocation movement and, due to their bulk, introduce compressive stress. Shot peening has also been used, which work hardens the steel, and introduces compressive stress. The steel surface in this case bears signs of the impingement of the glass or steel shot used in

the process, and therefore for applications such as bearing surfaces nitriding is preferred.

The treatment available for aluminium is not very different to that of nitriding steel. Aluminium can be alloyed with a number of other metals, which will form intermetallic compounds. These other metals are typically silicon, zinc, copper and magnesium, which will form for example compounds such as MgZn<sub>2</sub>, Al<sub>2</sub>Cu.

First the alloy is heated to a high temperature, but below its melting point, to take all the alloying additions into solid solution. At this point the alloy is quenched and becomes supersaturated.

This means that although there is present a strong tendency to form the intermetallic compounds, the atoms cannot migrate to link up chemically, because the alloy is too cold. The alloy is then tempered at a given temperature for a certain length of time. This causes the metallic compounds to form, or precipitate.

The process is known as age hardening, or precipitation hardening. These compounds have a similar effect in the aluminium alloy as the iron nitrides do in steel, except they are present throughout the mass of material, and not just at the surface. They strengthen the aluminium, and also hinder fatigue crack growth just by getting in the way of a propagating crack.

Modern crankshafts are typically nitrided. Con rods are made from forged steel, and are supplied with very smooth surfaces. The best quality aluminium pistons are produced from forged blanks, because they have a lower number of inherent defects than castings, from which cracks can grow.

Modern day fracture mechanics is now so well understood in terms of crack size/failure potential, that inspections of some cracks in critical components by x-ray, and ultrasound, will allow cracks below a critical size to be accepted, and the component signed off for further use.

## Would you believe it??

from the Editor

A few weeks ago, I went to take the Jarvis M-type out for a spin and some shopping, when on leaving the garage, smoke started pouring out from under the dashboard. I immediately switched off the ignition, but it still continued to smoke, so I then reached for the master switch, which turns everything off. That stopped it. Thank heavens for a battery master switch, which saved the day. (I have been gradually fitting master switches to all my cars for this very reason, as well as being an additional security device).

The next day, I investigated the problem, and found that the horn had shorted out somehow, and burnt all the wiring from the live switch to the horn. I replaced the wiring, but also inserted a fuse box in the feed wire, in case there was a problem in the future. The horn feed wire is always live for some reason; the

horn button only earths the horn to make it work.

I thought that was the end if the saga; but NO. It became more devious. I had got some new tyre and wheels on the back, and wanted to test that the tyres were not rubbing, as being the original 4.00x19 size, they were larger than the Dunlop 3.50/4.00x19 tyres that were on there before.

The car started up, but wouldn't run well, feeling like fuel starvation. It just about got to the petrol station, where we filled up, but that didn't help matters, and we packed up on the way home, 50 yards from the house, and I had to call Rosemary to

help push the car home!

I then set down to find the problem. The petrol pump delivery pipe was disconnected and put into a jar, the ignition turned on, and the pump pumped away merrily, but with only a few splashes of petrol coming out. I then fixed up a separate fuel supply to the pump, and it pumped fuel through as intended. So the pump was not at fault. There must be a leak in the feed pipe, this was

confirmed when I connected a separate fuel supply to the feed pipe at the tank end (the Jarvis doesn't have the normal M-type gravity tank). The tank connection had been loose, but that was just a red herring!

I then bought some rubber fuel pipe to completely replace the copper feed pipe running back to the tank. Before embarking on this major work, I decided to change the fuel pump for my spare. I had heard that sometimes the diaphragm gets punctured or damaged, and it therefore might not have enough efficiency to suck petrol all the way from the back of the car, but able to pump from the separate supply I had fixed up close to the pump itself.

Sometime this year, I had swapped the last separate section of copper petrol feed pipe for a length of Petroflex pipe, to try and cut down on the car's tendency to vaporise its fuel in hot weather. This pipe has a metal external wrapping over a rubber pipe. The length I had was longer than the copper section, so had to loop round to connect to the pump on the bulkhead, and ended up touching the horn, also mounted on the bulkhead (as it is a Klaxon variety).

Having replaced the pump, I was just about to replace the Petroflex section, when I noticed a burn mark on the metal wrapping. I couldn't understand this, as it was nowhere near any electrics. The burn mark exactly coincided with the position that the Petroflex had been touching the Klaxon horn. This had shorted out, as mentioned earlier, and somehow it had shorted via the Petroflex metal casing. In so doing It had also burnt the rubber pipe inside (which you cannot see), and this was confirmed by putting the Petroflex pipe in a bowl of water and blowing through it, when bubbles were seen to come from the place were the burn mark was. So it turned out that the Petroflex pipe had got damaged when the horn shorted out.

The old copper pipe was replaced, and the car is now back in action again. It is not something that you would ever believe could happen.

### YOUR LETTERS

### From Brian Rhead

Dear Phil

I have acquired what appears to be a Styles De Luxe pattern windscreen, as fitted to the F-type, as seen in the popular photo of the Styles car. It will either fold flat, or hinge forwards. It does not taper towards the top. The body brackets have been somewhat bent out of shape, by some hooligan presumably to make it suit their requirements. It looks something like this sketch, after reforming:-

Fixing holes very similar to standard Fl

There is a small manufacturers circular brass plate, the same as fitted to a J2 screen with "Perfecta, Birmingham" on it. It would be useful to compare this with another, in particular the body brackets.

If it is a Styles windscreen, and someone needs it, I would exchange it for a J2 one, otherwise it will go on the J-type that I am putting together, since the scuttle width is the same.

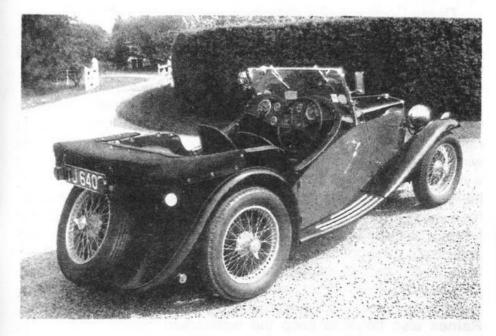
Best wishes

### From Peter Lee

Dear Phil

I thought you might be interested to see the final result of my rebuilt NA, TJ 6409. it was originally sold as a Police car to the Lancashire Constabulary in 1934. Later it was sold in a Christies sale in 1997 for £16,400, and was taken to Germany. There it was completely dismantled, every last nut and bolt, but obviously it became too much for the owner, who gave up.

It got back to this country, still as a complete basket case, and I bought it in 2001, and have spent the last four years putting it back together again, and the result is as the photo enclosed.



Peter's fully restored ex-police NA

It still retains vestiges of its police past – two non-standard, but obviously original switches are fitted, one for the spotlight, and one for the bell or siren.

I am told that they originally had a Bowden cable in the drivers side, which when pulled, allowed the rear number plate to swivel through 90 degrees to show "POLICE STOP". I am sorely tempted to replicate this!

I am delighted with the car – it is a sweet little thing, very smooth and much admired. It is a very practical touring machine, which you will see has been restored to its exact original condition.

Yours sincerely

### TIPS & HINTS.

Denis Cookson (2 Roker Park Avenue, Ickenham, Middx, UB10 8ED Tel. 01895 237693 e-mail cookson@gaskets.freeserve.co.uk ) can supply original gaskets for cars from 1920s to 1965.

How many members have tried that wonderful stuff "Rainex" for the windscreen. It keeps the whole windscreen totally free of rain, especially in the heaviest downpours, when our feeble windscreen wipers are quite inadequate. You need to clean the windscreen first, after which you apply it with a damp cloth, and let it dry. With a dry cloth, you polish it clear again, and forget it for a year or so. It doesn't affect the clarity of the screen, and you forget it is there until it rains, when the droplets collect together and drop to the bottom leaving a very clear screen for its whole area. The wipers of course only clear a small area, and then for just a moment. This of course means that you have better visibility in poor conditions, which makes the driving safer. Rainex also helps to keep the windscreen clearer of bugs/fly splats, etc.

North Hants Tyres have now moved to Aldershot from Fleet. Their new address is Henry John House, 2 Ivy Road (off North Lane), Aldershot, Hants, GU12 4TX. Tel. 01252 318666. They have a very good range of Classic tyres, and can fit and balance them too. They stock the Excelsior range, which is similar to the old Dunlop tread pattern, and at a price 1/3<sup>rd</sup> cheaper; also Avon, Goodrich, Michelin and Firestone, amongst others. However they do not stock Dunlop tyres, but got them within a week for me.

Ralph Dukes (15 All Hallows Close, Ordsall, Retford, Notts, DN22 7UP Tel. 01777 705130 e-mail ralph\_dukes@amserve.net) deals in everything to do with lights (including spotlights and rooflights), as well as horns and mirrors for our cars. He also provides a headlight resilvering service. He has recently remanufactured the fluted headlamp glasses for the P and N-type (@ £40 each), which were becoming very difficult to find.

**Ewan Harris** suggests that when fitting new king pins, which need some filing of the bush to insert the thrust washer, it is best to file the top one. This way a machined surface is still available for the thrust washer to mate with, especially valid if using roller thrust washers.

Formhalls Vintage and Racing Ltd (Greycott, Lower Densome Wood, Woodgreen, Near Fordingbridge, Hants, SP6 2BE Tel. 01725 511684, e-mail <a href="mailto:enquiries@formhalls.com">enquiries@formhalls.com</a> website <a href="mailto:www.formhalls.com">www.formhalls.com</a>) can help with whitemetalling and line boring for our engines, including crankshaft regrinding and balancing. A set of 4 MG rods recast £160. Other services include reboring, sleeving, block/head refacing, crack detection and pressure testing.

Richards Bros (Unit 6, Hedel Road, Canton, Cardiff, CF11 8DJ Tel.029 2022 9945) are specialists in wire wheel manufacture and renovation, and have been operating for nearly 70 years. They can also provide tyres to go with the wheels.

Coastings Ltd (Tel 01564 702 388) restore vintage lamps, as well as providing a resilvering service. They also remanufacture many items out of stock for Lucas Rotax and Smiths items. They can also do badge re-enamelling in vitreous and epoxy resin. Quartz halogen bulbs are also stocked for our cars.

The D-type group has now produced their 12<sup>th</sup> Newsletter, which gives useful information of what is going on in the D-type world There are tips such as the rain channel under the bonnet hinge being different to the J-type, as it has no wiring channel attached underneath; a drawing is available for those who need to make one up. Contact Ted Hack (Tel. 01242 603266 or e-mail ted@enhack.co.uk) they also have sets of four lubrication system brake cable joiners for sale at £10 a set post paid in the UK.

For our European members there is a crankshaft manufacturer in Belgium; Revisiebedrief NUYTS (Putsebaan 192, 2040 Antwerpen-Zandvliet, Tel. 32 (0)3 568 78 54) They list cranks for J2, J4, PA, F and K3s.

Colin Butchers writes "the recent Norfolk week-end a number of cars suffered ignition maladies, including failed condensers, pitted points etc. and you may be interested to hear of my own experiences - admittedly with my MGB.

For about eight years, I have been using a device called the Boyer-Bransden inductive discharge electronic ignition unit. It sounds grand, but in fact it is a very simple and useful gizmo, which has a number of excellent features, and no disadvantages that I have come across during the eight years of use.

The unit is suitable for any 6 volt or 12 volt negative earth systems, and consists of a small sealed unit, approximately three inches square, and half an inch deep (for those of you who only understand millimetres, ask your parents what inches are). It is fitted close to the coil with four simple electrical connections.

The main advantage of the unit is that it uses your normal coil, contact breaker and distributor system, which do not need to be hacked about in any way, shape or form.

The unit reduces the voltage across the points to a fraction of the normal value, which eliminates burning and pitting of the points. After cleaning and adjusting the points gap (or fitting new ones), you only need to adjust the gap very occasionally (B-B say after 500 miles), to compensate for any wear on the heel of the points. Whilst B-B mention 25000 miles without attention, I find that once a year it is desirable to run a small piece of cardboard through the points, to remove any dirt or oily deposit, which might have crept in, but there is never any sign of wear or burning on the points.

Another advantage is that the condenser is redundant, and can be taken out completely, thus eliminating another regular source of ignition problems.

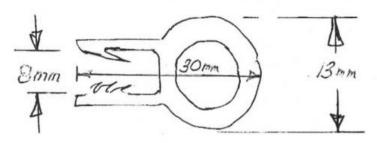
The final advantage is that the price is low, at a few pennies short of £30.

I have no connection with Boyer-Bransden, other than a convert, and I will certainly be fitting one to my NA, when it finally comes back to life. Boyer-Bransden are at Detling near Maidstone and can be contacted on 01622 730939.

Simon Cauthery has found an alternative to the standard firewall top seal for J-types, which is supplied by the usual people. It is much softer, and allows the bonnet to sit more easily

over the firewall. It is self-gripping and bends over the corners without kinking.

It may not be exactly like the original, and it seems to do the job, and looks neat. The suppliers are Walker Rubber & Plastics Ltd, Sproughton, Ipswich, Suffolk, Tel. 01473 749131. The reference is MTS 304, and costs £3.56 per metre including VAT.



### CARS FOR SALE



True vintage 1930 overhead cam MG. Very original, Fabric Bodied with all metal panels (bonnet, wings valances etc. bare metal repainted. The car is in good condition with current MOT, Tax and VSCC Buff form. Price £9995. Phone 01244 341484 and ask for Alan.

### SPARES FOR SALE

Brian Rhead (26 Leylands Park, Burgess Hill, Sussex, RH15 8AQ. e-mail n-rhead@hotmail.com Tel. 01444 247089 or mob. 07790 815839) has the following tyres for sale:-

4No. 4.00x19" Dunlops; 2No. 4.50x19" Dunlops; 2 No. 4.50x19" John Bulls.

The Editor has a  $4.75/5.00 \times 17$ " Dunlop tyre on a centre laced wheel, £35; a Spartan  $5.25/5.50 \times 17$ " tyre, £15; a Regent  $5.75/6.00 \times 16$ " tyre, £20; also two Gates  $560\times 15$ " tyres, £30 the pair; and two E78  $\times 15$ " tyres, £30 the pair; all with good treads.

ALSO for sale are an N-type, and P-type nearside doors, with good timber and metal, £20 each. Still for sale are a pair of good N-type rear wings, £35 the pair.

### = ROGER F THOMAS

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Le Mans Classic 2006 Barry Foster's C-type leads Bentley and Bugatti
Photo: Chris Lewis



Norfolk Weekend - John Reid makes a dramatic splash in the ford, driving Frank Allocca's blown J2; Photo: Neil Mackay



Norfolk Weekend - Photo shoot of the cars lined up at Caister Hall.

Photo: D. Morbey