THE

JULY, 1967.

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Affiliated with the Confederation of Australian Motor Sport.

President:	Geoff Mawley	2 0414	98 1068
Vice President:	John Fraser		59 4333
Past President:	Ray Lovejoy	2 2861	55 4047
Sacretary:	Geoff Gettons	33 9713	56 6331
Treasurer:	Ann Thomson		78 1363
1100001011	Will Charlton	2 E	68 3601
	Jon McCarthy		68 3474
	Ted. Holiday	51 6 0 07	
	Lester Whittaker	31 1461	98 1887
1	Mort Shearer	3 1 2436	6 5125
	Ross Horton		

Octagon Sub-Committee: D. Monroe, B. Tebble, J. Applebee.

Contributors: M. Shearer, B. Tebble, G. Hawley, R. Lovejoy, D. Monroe.

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EDITORIAL

The time is past ten, and the lone figure silently leaves the Clubrooms after another lonely night of cleaning up your mess!

Lester Whittaker has been the President and sole Member of the House Committee for over six months now, so I think it's about time that someone else joined the house Committee and halped keep the Clubrooms tidy.

After all, we all appreciate the cleinliness of our surroundings, and there is no reason why you should throw your but on the floor simply because it is not highly polished.

As you will see later on, there will be another Concourse De Elegance this year, and it will be unfortunate if the winner of the trophy is forced to say that he didn't really deserve it. There are quite a few imaculate cars in the Club, and many others that would not be out of place in the competition. Remember that the car is judged from many points of view and there are several classifications. Why not try for at least one!

Editor.

<u>NIGHT</u> RUN

After the dire threats and promises of a tough nite navigation run, I was a little disappointed with the event held on Friday June, 30th. A little pleased also, I must admit, because it was a ton of fun and didn't require too much grey matter activity - a good thing for me. Who wants to think on a Friday night anyway!

After fooling everyone with a misprint in the second line, the instructions mapped out a conventional route through . New Farm (stopping to admire the Alfa - who's in PR?) and out through Lutwyche to Stafford.

Across South Pine Road to Alderley and up a grass cliff - ??? Well, that's what the directions said to do.

One brave type claims he made car tracks up the one in one slope but I think he may be exaggerating!

Back to the Club's rooms via Spring Hill (Past the R.A.C.Q. building in Water Street) and Hamilton. But wait - out to Clayfield - right! And sitting in a B.P. garage in the shopping centre was Sitting Bull McCarthy - giving free autographs. O.K. now back to the Club.

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HILL CLIMB TIMING GEAR

Visitors to the club rooms a few weeks ago could be excused if they were blinded by the flashing lights around the room. Ray Lovejoy, electronic genius, has been at it again, and the lights were part of the prototype of the timing gear for the hill climb.

When the units that will be used at the hill climb are built, Ray expects them to cost about "30.00 for the pair.

The units employ a light beam from a car spotlight focused roughly on a photoelectric cell. The first part of the

car to break the beam will be the same at both ends of the course so the timing will be extremely accurate. Once the beam has been broken a delay device prevents a second impulse being generated. The impulses will control the stop-watch unit that the club already use

Eventually, Ray hopes to build a fully electronic timing systempleying Christmas tree similar to that used in drag racing, and an electronic clock. The clock alone will probably cost 600.00.

And how's the rest of the hill climb proceeding?

Tenders are in for the road construction and the successful contractor will be announced soon. This stage of the work will take about eight weeks, and then tenders will be called for the scaling. So, all in all, things look good. I.hope:

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OCTAGON

M.G.B. G.T.

Having driven a rag top B for two years, I decided that I wouldn't like the M.G.B.G.T. on principle. It wesn't easy to resist though, and at the end of the test I was head over heels. The car was offered by Brian Tebble of EMC, and after helding out for three seconds, I capitulated and agreed to drive the thing.

The virtues of the m.g.b. have been chronicled by many others more qualified to do so, and therefore I will confine the scope of my remarks to the finish and fit of the fibreglass hardtop which makes the G.T.

The overall finish of any m.g.b. is not exactly in the Rolls Royce standard, and the G.T. is no exception. The fit of the hardtop was perfect in the areas in sight, but a leak of exhaust gases in the rear made driving with the windows closed vary dangerous. This was eventually traced to the rear seal being porous, and it was easily fixed the next day.

Another annoying feature was the fidly boot lid, difficult to close and impossibly small. You could fit your hand through provided you did'nt close your fist.

It was pleasant to drive on a rather cool night and not have a miniature westerly wind coming over the right shoulder and I was assured that the car could be taken through a car wash and get nary a drop inside. So, provided you put the luggage in in small quantities, and watch the sealing, the G.T. is a very desirable transport machine. Even company executives commute in them!

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BODS AND BENDS

Said to me recently: I don't know whether the Pirellis increase the understeer or reduce the oversteer. Either way I think he has problems!

Wedding of Garry Cowan and Devon almost upset by floods. Devon's gear is being made by Paulo Stafford and came within inches of drowning recently.

In the next Octagon we will offer a discount column so if you know of a discount available to Club members, let's hear about it! Pip Bucknel tells me that he will sell tyres any weekday morning at 31 0271 at a percentage off. Must be a certain brand though.

Lester Whittaker has for sale one quick Sprite. Full details are on the notice board in the Clubrooms.

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A LITTLE BIT OF HISTORY

We all know something of the history of Morris Garages, how Cecil Kimber started the legend that is M.G. today.

But the M.G. Car Club (Queensland Centre) is closer to this history than many people know. One of our own Club Members is married to the daughter of the first employee of Morris Garages, Cecil Cousins.

The story started when Cecil Kimber burst into a room at Morris Garages and said to a young man, "Can you draw, Cousins?" This was in 1928. The young man had done some drawing at school so he went into town and bought some pencils, a set square, and a piece of ply (a drawing board was too expensive).

He then sat down and designed the first M.G. Chassis. The car was the Mark One Six cylinder - the first real M.G.

Thus began the career of Cecil Cousins. From "sweeping the floor" to designing and building cars, riding as mechanic in motor races, he became the assistant general manager of the abbingdon Works of M.G.

Mr. Cousins retired recently, and had this to say to the local (abbingdon) press. "I suppose I have done more or less everything over the years. If you want to ask questions about me and my life then I must tell you about the M.G. Company. M.G's. and my life are inseparable. I love motor cars and always have."

More than 60 years ago, as a small boy, Cecil Cousins used to hang round a small engineering shop next to his home in Walton Street, Oxford. He left school at the age of 14 and was apprentic to the firm of T.G. West. He stayed there for four years until 1920 when he joined Morris Garages. Here he first worked as an 'improver'. It was the "Thing" for undergrads at Oxford to have their motorcycles worked over to compete in sprints and hill-climbs. Cecil Kimber usually drove a machine that was just faster than the undergrads whetting their appetites for the machine that was just a little bit faster.

He then moved to the production of M.G. Cars. For many years it was touch and go whether the firm would flourish or flounder. It was with the production of the Mark One, the car that Cousins helped design that the future of Morris Garages was assured.

Over the years the records set and broken by M.G. have made the firm justly famous, and it was Cousins who was responsible for the experimental shop activities as Technical Superintendent and was also racing team manager for M.G.

When M.G. was taken over by Morris in 1935 and all racing was stopped. But just before the war Cecil Cousins and the famous driver Major "Goldie" Gardner went out to Germany with the all enclosed EX135 - a design years ahead of its time. On the German nutobahn the car was successively fitted out with 750 1100 and 1500 c.c. engines and smashed all three International class records travelling at over 200 m.p.h.

POINTS SCORE - TO DATE

Active members of the club are no doubt interested in "Whos Leading" in the points towards the Club's Perpetual trophies. Here they are up to 23rd June, 1967:-

TRIALS:

M. Shearer

R. Hiley

W. Charlton

NAVIGATION: - Mrs. N. Shearer

G. Gettons Mrs. H. Hilev

Under 1100 c.c.:- E. Holliday

SPORTS, SPEED: - C. Timms

J. Love

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Points Score (Cont)

Best M.G. All Round: - W. Charlton

M. Shearer

C. Timms

Motorkhana M. Sheurer

W. Charlton

R. Horton

Speed Overall Mrs. A. Thomson

C. Timms

E. Holliday

Ladies Trophy Mrs. H. Hiley

Mrs. n. Thomson

Mrs K. Hawley

Best All Round M. Shearer

W. Charlton

G. Gettons

Members are reminded that it is necessary to attend and work at least two working bees to be eligible for any trophy except Concours d'Elegance. For the Best all round trophy it is necessary to compete in at least two of each type of event while for the Ladies Trophy participation in at least one of each tupe of event is required and you must be of the "fairer sex".

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SPEEDOMETERS

Every time we hold a Night navigation run, treasure hunt or some similar event, the old cry is heard. "The mileages on the instruction sheet were incorrect". It would appear that few people know how a speedometer works, or the factors that effect its accuracy. Perfectly accurate speedometers are rare. As rare in fact as the cars you see running a fifth wheel.

Say for example your speedo is only 3% fast. Then you find

another competitor whose speeds is 4% slow. Over distance of ten miles, a difference of 7% is appreciable, without taking into consideration the accuracy of the mileages given in the instructions. But before we get too involved in this error business. A few words on how a speeds works might be helpful.

Only two types of speedometer are in common use today. They are the chronometric and the magnetic types. The chronometric comprises a revolution counter, an e-capement type timer and a device for engaging and disengaging the registering mechanism at the beginning and end of definite time intervals. To describe the principle of operation in detail would require more space than the Editor would allow and would only lead to confusion However, in brief, the chronometric is the best type of speedo. It combines precision with an accuracy around .3%.

The magnetic type is the most widely used today, due to its cheapness and simplicity. The principle of operation is as follows. The drive shaft or cable from the gearbox is connected to a permanent magnet which rotates at the same speed as the cabla. Between the magnet and a fixed field plate is an aluminium disc or cup. The aluminium disc is attached to a shaft which is supported by two bearings. The bottom bearing is of the jewel and pivot tupe, the pivot being part of the shaft, and the jewel is in the centre of the magnet on the axis of retation. top bearing consists of a hole in a yoke, through which the shaft passes. The diameter of the section of shaft passing through the hole is smaller than the main body of the shaft. This is to allow for end play adjustment by moving the yoke. The torque transmitted by friction between the rotating jewel and the stationary shaft is so small, that for practical purposes it can be considered nonexistent. To the end of the shaft passing through the yoke a pointer is attached. By rotating the aluminium disc the pointer is caused to pass over a scale marked in M.P.H.

As the magnet rotates, its magnetic field passing through the aluminium disc sets up currents in the disc. These currents set up magnetic fields of their own, which react with the field of the rotating magnet. Causing the disc to rotate. Attached to the disc shaft is a hair spring. The function of this spring is to oppose the rotation of the disc. Therefore the pointer will take up a position, where the torque of the hair spring,

Specdometers (Cont):-

is equal to the turning force of the disc. The faster the magnet spins, the greater the turning force of the disc, and the further the pointer will move up the scale.

When the car stops, the magnet casses to rotate, and the springer returns the pointer to the zero position. The centre of the spring is fixed in a collar around the pointer shaft. The outside turn (convolution) of the spring crosses against the shaft and is anchored to the yoke or main body of the speedo by means of a tapered pin in a hole. As the shaft rotates, the hair spring winds a This causes the outside convolution to press against the shaft, so effectively damping out pointer fluctuation.

The odometer or miles indicator is a separate mechanism, except that it shares with the speed indicator a common drive. The odome drive is geared to the magnet shaft. The gear ratio is such that one revolution of the odometer drive is equal to a certain fixed distance of travel. The gears of the odometer drive a series of cylinders. The cylinders are numbered 1-10 at equal intervals around their circumference. When the first cylinder has completed one revolution or 10 divisions, it moves the cylinder on its left one division. By this method, a record of miles travelled is indicated on the dial. This apparatus is entirely mechanical. No inaccuracies should appear except when the wrong drive gear ratios are used. Or when gear wear is such that it causes slipping. This will be explained in detail later.

Now you have some idea of how this infernal centraption works we can proceed further on this error business.

First of all, the M.P.H. indicator itself. As it gets older several defects will start to appear. Tension of the hair spring will alter. Quite possibly getting weaker, causing the speedometer to indicate high. The spring may become distorted due to vibration or improper fitting. This will cause the outside convolution to fail to come into proper contact with the shaft. Due to the loss of damping there will be pointed fluctuation.

As the permanent magnet ages, its field strength will become

Speedometers (Cont)

weaker. The effect of this is to cause the speedometer to indicate low. Bearings wear, and the magnet shaft will develop excessive end play. This causes the distance between the magnet and the aluminium disc to vary, thus effecting the calibration of the speedometer. Dust and particles of metal will gradually find their way inside the speedometer case, and accumulate around the magnet assembly. If regular maintenance is not carried out, this rubbish can build up, until it rubs against the aluminium disc. Cousing violent fluctuations of the pointer.

Another cause of failure of a similar nature, is over enthusiastic greasing of the speedometer cable. Due to the worm action of the cable, the grease is gradually pumped into the speedometer itself. The effect on the hair spring, when the grease finds its way between the magnet and the disc, causing them to rotate together, can be well imagined. I found this out from personal experience. Now I use a mixture of heavy oil and collodial graphite.

Sometimes wild fluctuations of the pointer, are not caused by a fault in the mechanism of the speed indicator, but in the speedometer cable. The cable may be kinked or a section frayed. This causes the cable to give a good imitation of a spring. Due to its binding momentarily and then releasing suddenly as the tension builds up. When a cable breaks, make sure that the magnet shaft rotates freely, before connecting it to a new cable. Sometimes, due to lack of lubrication, this shaft will become stiff and occasionally seize. This is one of the major causes of cable breakage. Finally, bewere of sharp bends in the cable between gearbox and speedometer.

Now we come to the odometer, and the factors that can effect its occuracy. Due to their mechanical coupling, they will also effect the speed indicator. The odometer is geared to the road wheels. The ratio is determined by the speedo gearing the differential ratio, and the diameter of the wheels. So that a certain number of revolutions of the road wheels will cause the odometer or distance indicator to advance by one mile.

Speedometers (Cont)

It can be easily seen, that any factor that alters this overall ratio, will effect the accuracy of the odometer to some degree.

First, we will examine the road wheels. There are several ways that their original diameter can be altered. The fitting of oversize or undersize tyres will effect the original diameter. As will tyre pressure, by over or under inflation, or temperature. Tyre expansion, due to centrifugal force, has a marked effect on tyre diameter. For instance, a typical wheel took 800 revolutions to cover a mile at 10 m.p.h; at 80 m.p.h. it took 780 revolutions to cover the same distance. A difference of 2.5%. Wheel slipping is often blamed for errors, though it is not always the bogy it appears to be. On normal road surfaces, slipping would amount to no more than one or two revs. per mile. Of course, on a loose gravel surface or at very high speed, it is an entirely different story. Tyre wear is another cause of error, and possibly the greatest at normal road speeds. A smooth tyre has had its diameter reduced to such an extent, that it can cause a speedo to read as much as 4% high.

Many manufacturers have a range of alternative differential ratios for their cars, and it must be remembered, that when the differential ratio is changed, the speedo drive ratio must be changed to bring the overall ratio back to the original. Many enthusiasts fail to do this and then wonder why their speedometer is as much as 30% out. Manufacturers supply conversion goars for the speedometer, to bring the overall ratio back to somewhere near the original. Usually it is difficult to obtain the exact ratio, as convertor goars are often supplied in steps of about 6% between goars. So sometimes an acceptable 3% error is as close as you can get to the original.

Possibly you are now wondering just how accurate your speedometer is, but before you pull it apart and end up with a pile of little bits on the kitchen table, wondering how you can get them together again. Here are a few simple methods for checking its accuracy.

Speedometers (Cont)

The usual method of checking a speed indicator, is to compare it against a tachometer of known accuracy. This is done on a machine which has a variable speed drive, and provision to mount the speedometer with the tachometer, so that they are driven off a common drive. The revolutions per mile of the speedometer is ascertained; this is often marked on the dial, 1,600 being a common figure. Now when the tachometer indicates 1,600 r.p.m., the speedometer should indicate 60 m.p.h. and at 800 revolutions, 30 m.p.h. etc.

Unfortunately apparatus such as this is not readily available, so we will approach the problem from a different angle. First we must determine the accuracy of the overall drive ratio, and this can be done in the following manner.

First disconnect the cable from the speedometer, now mark the tyre at its nearest point to the ground and mark the ground to coincide with this point. Move the car forward six full turns of the wheel and mark the ground again. Count the number of turns the cable has made to the nearest part turn, and measure the distance the wheel has moved in inches. The formula for revolutions per mile is L x T over D, where L = 63,360 (inches per mile), T = number of cable turns, and D = the distance covered by the wheel in inches.

Example :- T = 13.5 and D = 534.5

Revs. per mile $\frac{63360 \times 13.5}{} = 1,600$

534.5

Now that we have determined the accuracy of the drive ratio, we can check the speedometer accuracy by the following method. This method will be old hat to you trials experts, but here is a brief summary of the method for those

not too sure of the procedure. Pick a straight flat stretch of road and drive along it at a constant speed, say 30 m.p.h. Have your navigator with a stop watch note the time in seconds required to cover exactly one mile. The actual speed in miles per hour is found by dividing 3,600 by the time in seconds required to travel the mile.

Those who think this method a waste of petrol that could be put to better use in club events, can use a variation of the method if they have a lathe available. First obtain an old speedometer cable with the square end intact. Clamp it in the jaws of the lathe so that the square end projects about eight inches. Remove the speedometer from the dash and insert the square end of the cable into the magnet shaft. By clamping the speedometer into position, or holding it in the hand so that the cable runs true, time the speedometer over a mile by the method described above.

Well, there it is, but before you go away with that thoughtful look on your face, remember this. Those mileages given on the instruction sheet are only a guide. The careful navigator will make corrections to them when the speedo of his car indicates a different distance at prominent points. A well run event always have a few given in the instructions for this purpose.

DON'T FORGET TO ATTEND THE WORKING BEES AT THE MT. COTTON HILL CLIMB SITE. SEE YOU THERE

NOTES FROM THE T - REGISTER

Hiley's have a new arrival. An immaculate black T A in superb condition. Not entered for the next gymkhana either. All they need now is a T D and they will have the whole T series.

Keith Fidler has also joined the ranks of multiple T-type owners with a half-finished T C. His T F is still on the way back to the road.

Only one T type at the last gymkhana. Cleaned 'em up too, with a clean sweep of points. How about a bit more representation of T-types at events?

Pip Bucknell is now married. Congratulations and best wishes, Pip and Lyn. Hear there's promise of a T Type in the family.

Captain of the T Register of the VSCC in Sydney is currently racing a P type with a crankshaft 90 thou. under, and revving to $8\frac{1}{2}$. A brove man.

Young Grahame Wright is still in hospital after he and his Suzuki crossed swords with a car. Hope to see you back soon, Grahame. Moral. T Types for ever.

If anyone wishes to visit Grahame, he is at present in Royal Brisbane Hospital (nee General) Ward 24.

They tell us David Miles is having piston trouble - suggest you see Ross Devoncorm who has just learnt how to rebuild T type motors.

THE MGMIDGET SERIES T.

1936 saw the beginning of a new era in the famous series of M.G. Midgets. The series T (now known as TA) was introduced with an O.H.V. motor.

"'orrors!" cried the purists. "Woe is us. They have forsaken our beloved overhead cam engines! Shame!"

Even the purists, though had to admit that the OHV 'T' was faster and more powerful tah the OHC PB which it replaced. Albeit with a motor one third bigger.

The TA was crammed with innovations to the Midget series. Some of these were:-

Hydraulic Brakes
That controversial OHV motor
A water pump in place of the previous thermosyphon cooling
Synchromesh (third and top only)
A new type remote control gear lever
Hydraulic shock absorbers on front wheels as well as back.

"Will it never end? Drivers are getting too soft"

It had a long stroke engine - 63.5 x 102 revs, four cylinders 1292 c.c. producing 50 b.h.p. or about 6.5 to 1 compression.

A single-plate oil bath clutch conveyed the herbs to the gear box with the abovementioned goodies. Gearing was quite high, with 50 m.p.h. requiring only 3030 r.p.m. in top.

Anchors by Lockheed, 9" drums. They could stop it from 30 in 33 feet, if a little sideways. One forgiving road tester of the day commented sagely that very few cars of the day could stop in a straight line, anyway.

Performance was quite dashing. The boy racer of 1936 in his standard TA could polish off a standing quarter in 20.8 seconds and hit 50 in 15.4 seconds.

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Steering was a pretty wild $1\frac{1}{2}$ turns lock to lock, so it didn't pay to drive if you had hiccups. Or weak wrists.

The beasts could come within a whisker of 80 and top 60 in third.

It has been said that a TA motor can be bored to 1800 c.c. and that with suitable mods and a fully machined and counterbalanced crankshaft (available from your friendly neighbourhood M.G. dealer on 7 years order at a mere "260) it can top the wildest of T Cs on power output.

A quick look at the water jackets makes the 1800 cc. bit hard to believe, unless you want fully floating gudgeons .. and pistons.... and rods.... and crankshaft.....

NEW MEMBERS

We are please to welcome the undermentioned new members and hope their stay in the Club will be a long and happy one.

P. Stockwell

J. Williamson

D. McBride

G. Crole

M.G.Magnette 2A

T.C.

Wolseley G/80

T.C.

MORE BODS AND BENDS

from interested Spectator

Quite a number of members will be making the scene at Grafton again this weekend. A round of the New South Wales Hillclimb Championships will be staged at the Mountain View Course by the Grafton Sporting Car Club.

Among those making the trip will be - Tim Harlock with a Centaur, Keith Turner (Centaur), G. Littlemore and G. Ramsay (Cooper S's), Jon McCarthy (Mini Deluxe), Will Charlton (MGB), Ted Holliday (Sprite), and Ann Thompson (Lotus 15).

We hear that Brian Tebble will drive Ann's Lotus if she wins at the Poker Machines in the Grafton Club saturday night.

Kerry Horgan bought himself a Mark 1 Sprite to be converted into a "Sports Racing" monster. We hear rumour of a 289 V8, 12:1 and blown, but that may be just rumour!

A few of our socially minded members may be interested in booking an M.G. Car Club table at the Annual B.M.C. Ball, to be held at Riverside Ballroom on Friday, 18th August, 1967.

Quite a few have attended in past years and a good time has been had by all. The night is informal, has a good band, compere and entertainment.

Tickets are 2.50 each (single) including supper.

Interested members may phone Mrs. Jane Evans at B.M.C. (Phone 47 1327) and should stress "M.G. Car Club table" when ordering.

Don't forget!

Programme.

If you really went to get your kicks from the Club's activities, take a close look at the highlights of the events planned for the next few months.

JULY 14: TOUR. This will be to either the D.C.A. workshops at Eagle Form, or to a slot car circuit, wich ever is the easiest to arrange!

JULY 28: FILMS. The films to be shown include 'Bottlers' such as '66 Le Mans, '64 Daytona 500, '54 Redex Trial (down memory læne for some?), Wildest Ride (Craig Breedlove flips at 500 m.p.h.) There are other top line films still being accumulated and this will be an evening to remember.

JULY 23: Driving School: See over page.

AUGUST 6: SPRINTS: This event is being organised by Ipswich
West Moreton Car Club and we have been invited,
so if you have been one of our ever eager
organisers who have not been sprinting lately,
here's your chance to clear those cobwebs.

AUGUST 19: NITE RUN: A Saturday Night, Sunday Morning affair, as far as time is concerned anyway!

Late September: Concourse De ele ance. This has tentatively been programmed for the end of Sept. This year should see a galant battle waged between last years winner, Bruce Ibbotsen and Rod Hileys recently equired Th, Morts Shearers TF, Pip Bucknels K3, and many other immaculate cars to numerous, we hope, to mention here.

DRIVING SCHOOL.

If you remember the last driving school and you were an instructor, you won't turn up to the next one on JULY 23. However it you were river, wild horses won't keep you we you like the search of the

11. v nt st rts t ten, chergoes till the sun sets,

1.00 buys you the damdest amount of fun you've had for ages!

HELP HELP HELP HELP HELP HELP ENLP HELP HELP HELP

Help your Club to help you, by attending as many activities a you can. The Committee endeavours to pleas you, but if the type of event which you particularly enjoy is not scheduled, let us know and we'll try aur damdest to put it on the calender and cater to your whims

WATCH THIS SPACE, AND PROVE YOUR AN IDIOT!