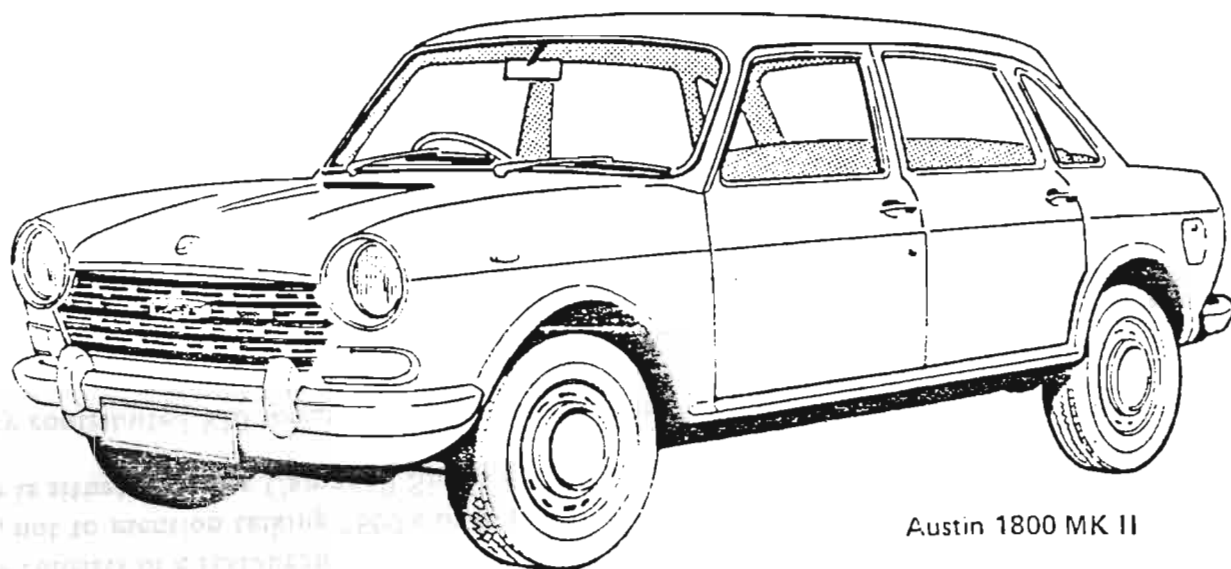


# AUSTINTASHUS



Austin 1800 MK II

Number 8

AUSTIN 1800 CLUB NEWSLETTER

JANUARY 1980

The long spell of wet weather cleared on Sunday, 11 December, in time for our meeting at Weston Park where it turned out sunny and warm albeit a little windy. Unfortunately we were not the only ones to get out of doors; consequently the BBQ sites were at a premium when a lot of other folks had the same idea, however we did manage to find an alternative area in full view of the road and members were able to meet up without too many hassles.

Apologies were received from Don Thomas and Mick Oates who had other arrangements.

At last we have the official recipe for Hydrolastic Fluid thanks to Bill Wheeler. The liquid is a solution of 49% alcohol, 49% distilled water, 1% triethanolamine phosphate and 1% sodium mercaptobenzthiazole, which is of constant viscosity, and has a freezing temperature of  $-31^{\circ}\text{C}$ . According to BMC the particular reason this fluid is used instead of distilled water with an anti-freeze is that this fluid IS an anti-freeze solution of constant viscosity containing a rust inhibitor with an agent added to make the fluid distasteful. This was a legal requirement. (The source of this information was the book *The 1100 Companion* by Kenneth Ullyett.)

Even before coming upon this information Tom Bray had diagnosed the fluid as mainly alcoholic with possibly anti-freeze added and has indeed made up some fluid consisting of methylated spirit and anti-freeze mixed 50-50 with a little radiator anti-corrosion added and has used it successfully in his ute for some time with no adverse effects. It seems we weren't far out anyway, were we?

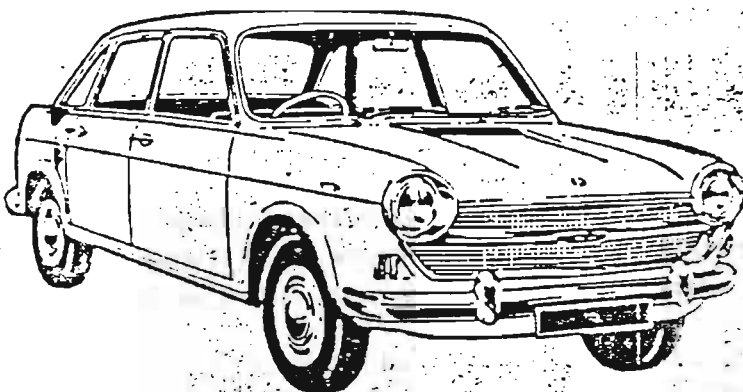
During the past month further correspondence was received from Pat Farrell of the *AMV Club of Victoria*. He included a copy of a 1970 British Leyland newsletter which related to special tuning and heavy-duty parts for the 1800; Clutch, Pistons, Camshaft, Valve Springs and the like. The part numbers are also available although whether they are still valid I don't know. Anyone interested in this information please give me a bell.

Also included was a leaflet on the 1800 Centre of which a photocopy appears below:



# 1800

**SPARE PART  
& SERVICE**



- new spare parts and a good range of secondhand spares for Mk I and Mk II
- change-over service available for automatic transmissions, radiators, clutches, electrical items, carburettors, etc.
- mechanical, body panels, interior trim, screens, ty
- hydroelastic suspension inflating
- We are interested in weary and damaged 1800s for dismantling. Our policy is to keep 1800s on the road at a reasonable cost.

Contact the 1800 Centre. Robert Leonard on 459 92

This is very interesting indeed and I promise that I will contact Pat regarding the 1800 Centre to find out more about it. Pat also included some Vic AMVC stickers and kindly donated \$10 to our club on behalf of the Vic AMVC for which we thank them very much.

Whilst on the subject of stickers I made enquiries with a promotional sticker company in Fyshwick to get an idea of the costs involved with the idea to get some made up for our club. I was quoted in the region of \$220 for a minimum of 500 vinyl stickers so I guess we look to maybe getting some sort of car badge made up depending again on costs. Also, before our next meet I shall try and make up some sort of leaflet advertising our club for our distribution to keep in our cars and put under any 1800 windscreens we see.

Now to our next meeting ...and a change of venue. How about a weekday evening? I propose we gather at the *Campbell Brasserie* on Tuesday, 10 January, at 7.30 pm. The Campbell Brasserie consists of a restaurant with an adjoining bar with tables and stools and is ideal for our purpose, not to mention talking 1800's over a beer or two which no doubt appeals to many. The brasserie is situated in the Campbell Shops complex in Blamey Crescent. See you there.

Jim Latty contributed \$10 toward the club and our current balance is a little over \$37.

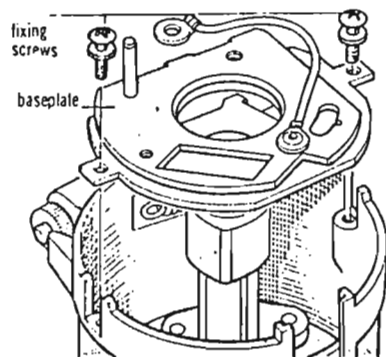
Remember, we're travelling 1st Class

Mick

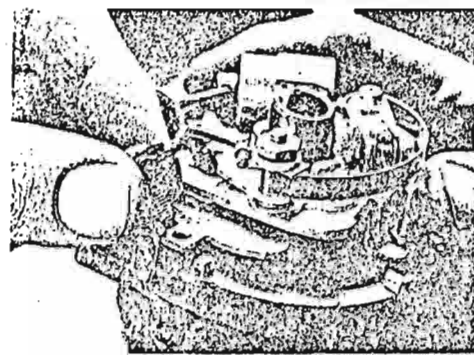
## FOR SALE

Don Thomas is reluctantly selling his MkII due to his increasing loss of feeling in his left leg, which affects his gearchanging, and has consequently acquired an automatic vehicle. His MkII is in very good mechanical order and has 11 months registration. Any interested parties can contact Don on 81.3046.

1967 MkI Manual. Good motor and gearbox with the clutch recently overhauled. Interior is in excellent condition and is very original. This car runs beautifully and is very quiet and has been checked right through. It's unregistered and is green in colour. Phone Mick on 82.5262.



4. Two screws hold the baseplate in position



5. Lifting off the baseplate

provided between the plates. They are intended to smooth the movement of the plates but they

do in fact wear quite quickly — and sometimes disappear completely. These buttons are

unavailable separately so if they have worn you will have to replace the base plate.

## STEP 5

## FREE THE MECHANICAL ADVANCE

Some Marelli and Bosch distributors have the bob weights at the top of the main shaft immediately under the rotor arm. These types obviously do not need to be stripped down for you to inspect the mechanical advance and retard unit. But they are the exceptions and you usually have to remove the baseplate before you can inspect the bob weights and the movement of the cam.

Note carefully how the springs and bob weights fit together and interlock with the static part of the mechanism. It is a good idea to make a drawing of the different parts because it is unlikely that your handbook or workshop manual will be detailed enough to cover all the variations between the different models which you might encounter.

Remove the springs (fig 1) and lift the bob weights off their posts (fig 2). Hold the bottom of the main shaft in one hand and the contact breaker cam in the other. You should be able to turn the contact breaker cam freely and independently of the main shaft. If the movement is free and easy just slide the cam off

the main shaft and clean off the old grease. Relubricate the shaft with engine oil and slip the cam back on.

If the main shaft and the cam are seized together, tap them apart with a mallet. Take care not to damage the bottom end of the main shaft. If one sharp tap does not dislodge the cam, spray it with dismantling fluid. Clean off any light rust on the cam or shaft with fine emery cloth, then lubricate the main shaft with engine oil.

It is usually only dirt and con-

gealed oil that prevent the bob weights from working smoothly so clean them, their posts and the cam with paraffin or methylated spirit. Then replace the weights on the posts and lightly lubricate the whole advance and retard mechanism with engine oil.

Finally fit new springs between the posts on the bob weights and their posts. These springs control the bob weight's movement so the ignition will only advance properly if they are in good condition.



1. Freeing bob weight springs



2. Lifting weights from posts

## STEP 6

## REASSEMBLE THE DISTRIBUTOR

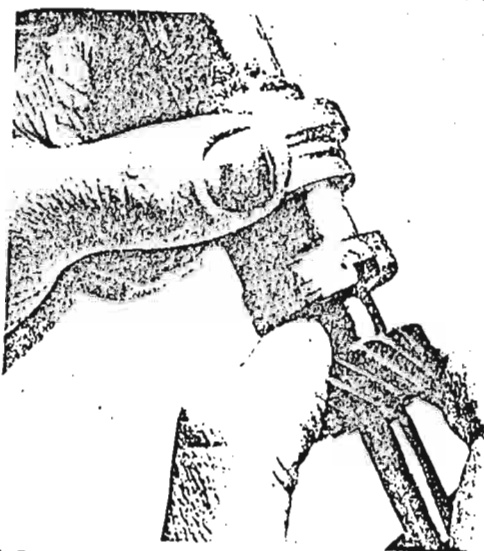
Clean the spacing washers and then slide them on to the bottom of the main shaft in the order in which they came off. Now put back the drive gear or drive dog on the bottom of the shaft and line up the marks that you made when you took the gear off (fig 1). If you are fitting a new gear or dog, make sure that you put them on the right way round.

Align the holes in the drive gear and the main shaft and press the pin in as far as it will go. It is important that the pin is a good fit, though a light tap should be enough to push it home. If the pin is loose, get another one from a scrap distributor — any movement between the main shaft and the drive gear will soon get very serious indeed.

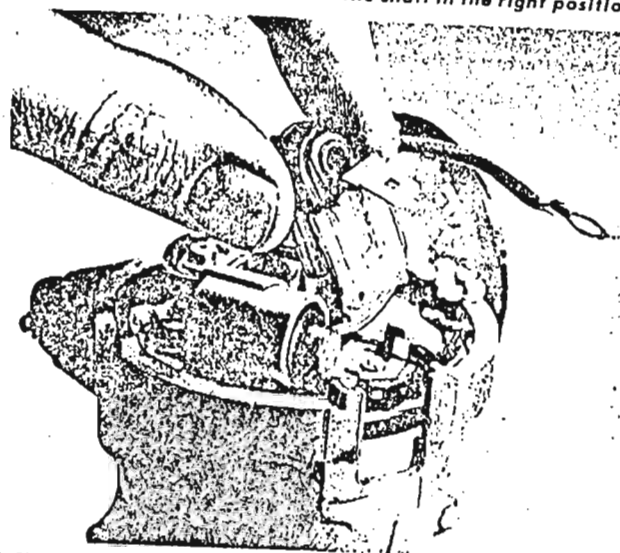
Spin the main shaft with your fingers to make sure that it is not binding anywhere, and check that the bob weights and springs are still fitted correctly. Do not worry if there is some backlash as this is adjusted by the spacer washers according to the design of each particular distributor.

If you are replacing the old contact breaker baseplate, make sure that it is clean and lightly lubricated with engine oil. It can fit either way round, so make sure that the post for the vacuum unit connector is on the correct side of the distributor body. Check that the earth tag is in good condition before fitting it under one of the fixing screws. Turn the moving plate backwards and forwards a few times to make sure that the earth tag is not going to chafe.

Now fit the vacuum unit and test that it is working and the contact breaker baseplate is moving freely. All that remains to do is fit the lead from the side of the distributor to the contact breakers and condenser. The side lead should be fitted after the other small components — it must be renewed if it shows any sign of wear.



1. Putting the drive gear back on the shaft in the right position



2. Fitting the plastic insert and low tension lead

Lucas supply the lead and the plastic insert as a replacement item (fig 2), but on other models the easiest course often is to replace the whole wire from the coil to the contact breakers. Unfortunately you will probably have to solder the end fitting from the old wire on to the new

one, to be absolutely sure that it fits on to the terminal easily.

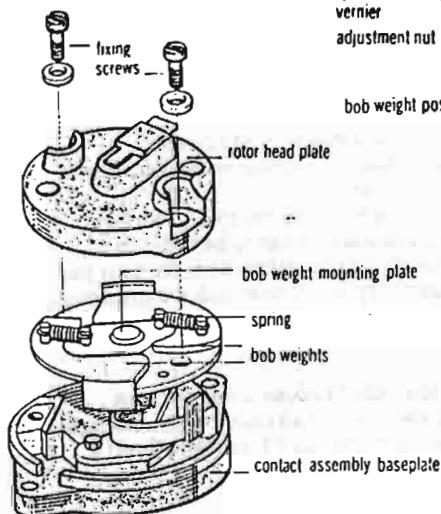
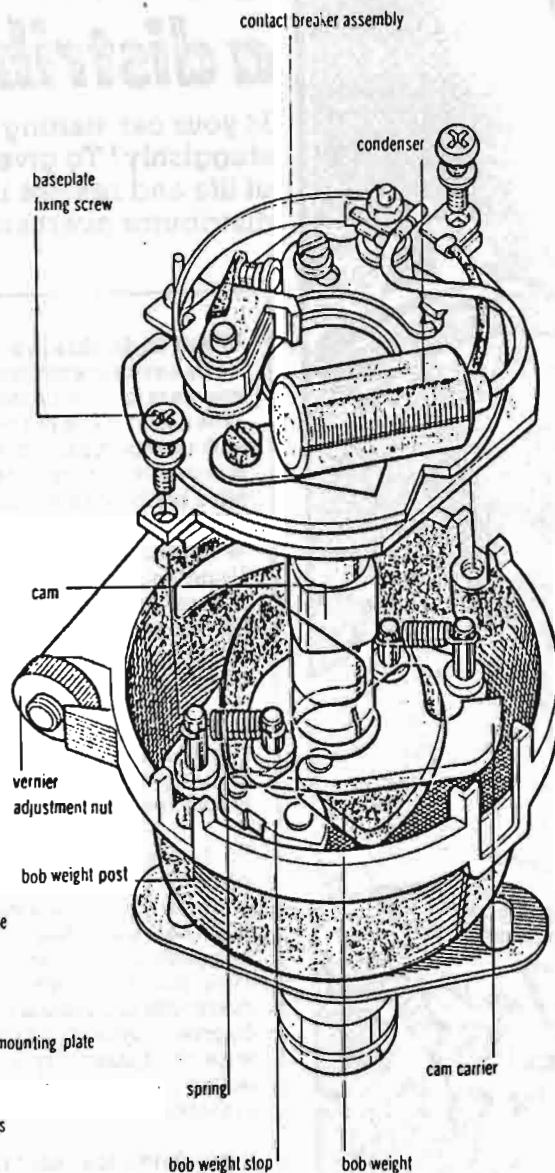
Unless you know that the condenser and rotor arm have been replaced very recently, fit new ones as you complete the final assembly (see WW 12). Finally examine the contact breaker fixing screws before



If a car is to run properly, ignition of the fuel-air mixture must take place in each cylinder at the right time. The distributor initiates the production of the spark, and ensures it goes to the right spark plug in the correct sequence.

Some parts of the distributor — the rotor arm, contact breaker points and condenser (capacitor) — get changed many times during the life of a car. But there are other parts of a distributor which should be looked at, particularly if your car is running badly and you are unable to find any other faults.

There are a number of different makes of distributor fitted to different makes of car. They vary a little in design but all perform the same function. To keep your distributor in good working order it is well worth carrying out a few simple checks. An overhaul will aid efficiency — particularly if the unit has been in service for quite a long time.



A distributor can have the bob weights above the baseplate (left), or below it (right)

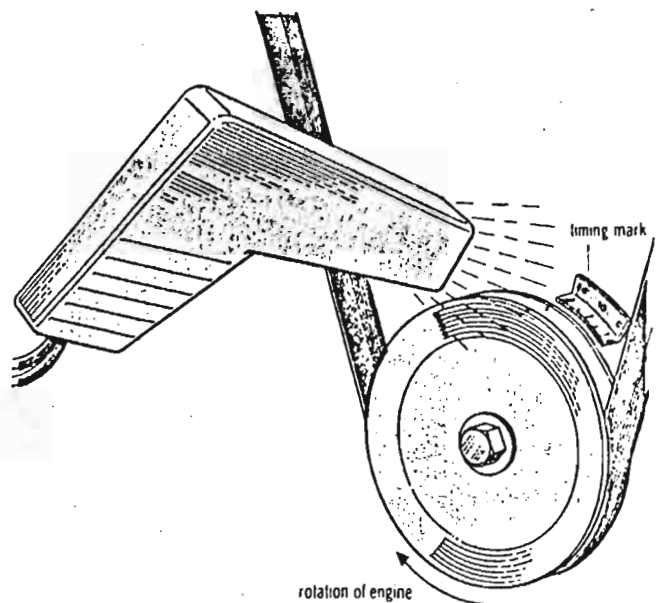
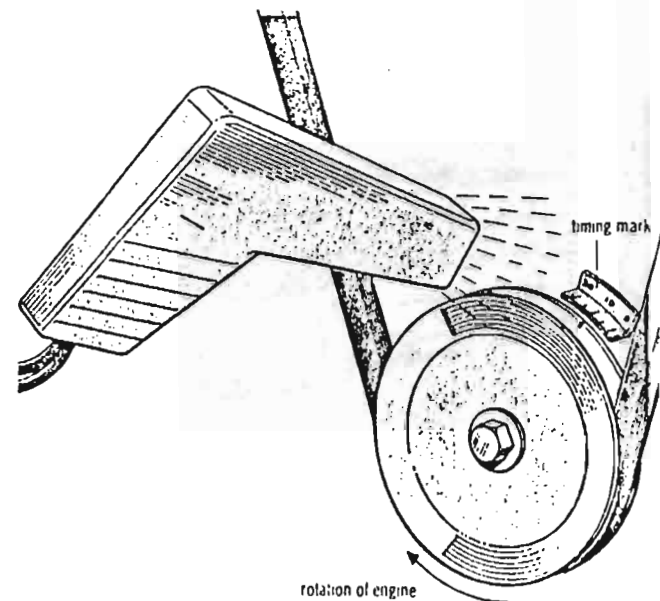
## STEP 1

## CHECK IGNITION ADVANCE

One method of confirming that a distributor is worn is to check whether the ignition timing advances correctly as engine speed increases. To do this, first check that the contact breaker points are in good condition and correctly adjusted (see WW 10 and 11), then start the engine and run until warm. Once the engine has settled down to a steady idling speed with the choke pushed right in, check the timing marks with the aid of a strobe light (see FIY 18 to 20). The timing marks should line up with each other correctly.

If you had to adjust or renew the points you may have upset the timing slightly but if — even after adjustment — the timing seems to vary and the timing marks on the pulley appear to move back and forth, then something is worn in the distributor.

While the strobe light is connected you should also test the advance and retard mechanism. Keep the strobe pointing at the timing marks and speed the engine up to around 4000 rpm. Almost as soon as the engine speeds up, the moving timing mark should appear to move smartly to one side of the static timing mark (fig 1). If the aperture where the timing marks are is quite small, the moving mark may disappear completely. In this case, speed the engine up gently from idle



### TIP

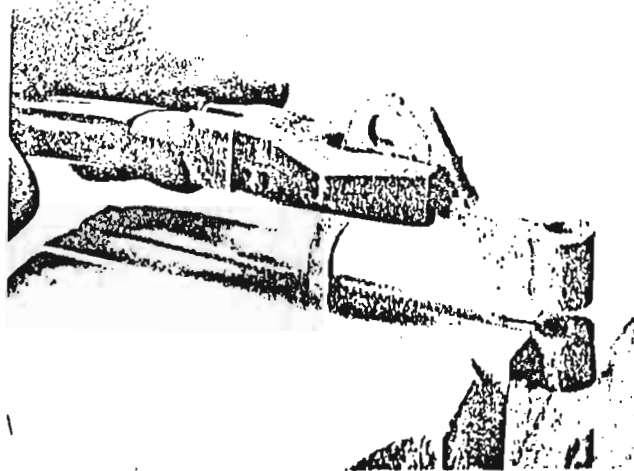
#### 'Feel' the revs

If you have not got a tachometer, listen to the engine idle — that will be around 600 revs. Pull the throttle until the noise is nearly unbearable — that will be about 5000 revs. Let the throttle halfway down — and you will be doing 3000 revs.



you retighten them. They often suffer a lot of damage over the years and this makes accurate adjustment of the gap much more difficult. Unfortunately, it is not easy to get replacements but again an auto electrician should be able to help. Otherwise try an engineer's supplier who just might be able to find a couple of Allen screws to fit.

Lastly, if your distributor is fitted with a body clamp, loosen off the bolt and make sure that the distributor can rotate freely. If the body clamp looks bent, put it in a vice and use a pair of pliers to straighten it (fig 3). If there are any burrs on it remove them with a file and finish off with emery paper. Check that the distributor now rotates freely — this will make it much easier to adjust the timing — and also fit a new pinch bolt if the original one shows any signs of wear.



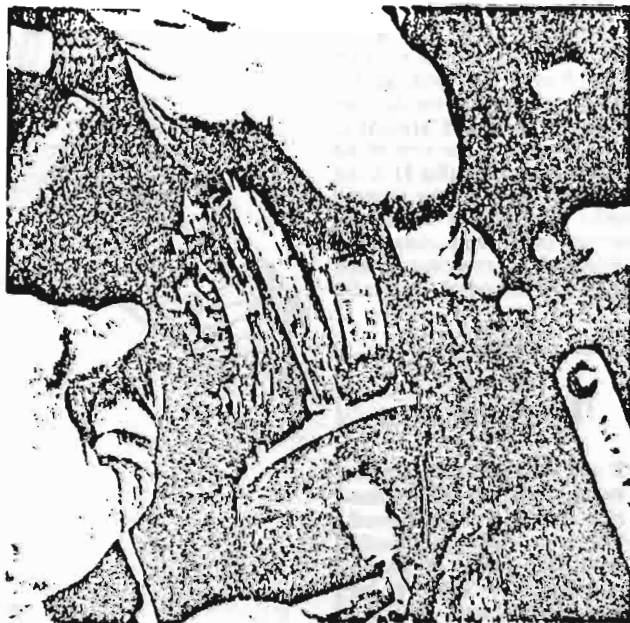
3. Using pliers to straighten body clamp in a vice

## STEP 7 REFIT THE DISTRIBUTOR

To refit the distributor set the rotor arm so that it is pointing to the 7 o'clock position. The distributor cap corresponding to cylinder number one and insert the base of the body into the engine so that the scribe marks you made earlier line up.

As you push the distributor home you will feel the drive gear engage with the gear in the engine. If you do not, wiggle the rotor arm to rotate the shaft until it has locked into position (fig 1). If your distributor is fitted with an offset drive, make sure that it is the right way round before you start. Some Mopar distributors have a splined timing at the bottom — these may also need to be refitted should you get them to fit.

Now tune the timing statically and then start the engine and use the timing light to set the timing down on page 19 (15 to 20). Turn off the engine and refit the vacuum advance type.



1. Ensure drive gears engage

# Overhauling a distributor

Is your car starting badly and running sluggishly? To give your engine a new lease of life and restore it to peak performance, a distributor overhaul may be the answer

### When to do this job

If you have recently bought a secondhand car and you want to give it a thorough tune-up  
When your car is not responding to a normal service with new plugs and points  
If your petrol consumption is poor and the engine idles badly but the carburettor is in good condition

### What this job involves

Using a strobe light to check for wear  
Removing and refitting the distributor without losing the correct timing  
Stripping down and cleaning the distributor and replacing worn or broken parts

### Related jobs in this handbook

Curing starting problems  
Get your timing right  
Please see Index for page numbers

### To do this job

**Tools:** Strobe light; spanners; screwdriver; hammer; preferably vice and bench; plug spanner  
**Materials:** Dismantling fluid; oil; wire; clean rags; new parts as required

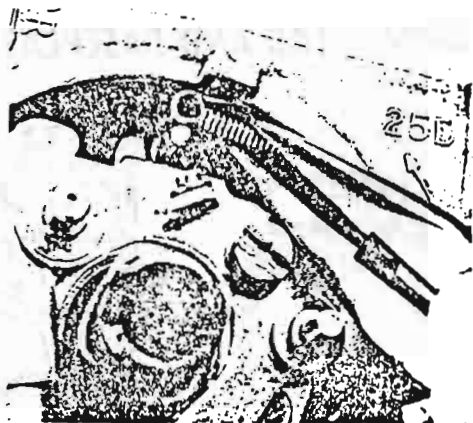
**Time:** Half day for complete overhaul, two hours if distributor is worn out and has to be replaced

**Degree of difficulty:** Straightforward. Hardest part is to get the spares. Try to get new bob weight springs before you start work. Vacuum units are widely available

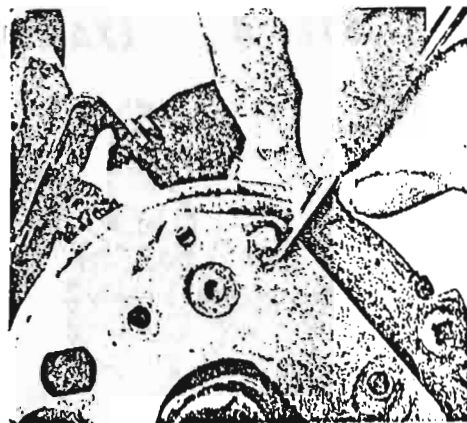
### If you have the job professionally done . . .

Is the performance better all round with noticeably improved fuel consumption? Have they fitted a reconditioned unit or a new one?





2. The vacuum unit may be held by a spring



3. Some vacuum units are held by a clip

and check that the moving mark does vary in position with the engine speed. In some cars you can see the mark move over its full distance — it should come to a stop when the engine is doing about 5000 rpm. If the timing does not advance correctly, check the advance mechanism.

On most cars, the ignition advance is caused in two ways by mechanical bob weights and by a vacuum system.

The mechanical advance alters the ignition timing according to the engine speed; the vacuum advance alters it according to the throttle opening.

To check the operation of the mechanical advance mechanisms, shine your strobe light on the timing marks and run the engine at idle. Disconnect the vacuum advance pipe which links the carburetor to the bell-shaped unit mounted on the side of the distributor. Then accelerate slowly up to full speed. The moving timing mark should move from the static mark until it reaches maximum advance. If it does not, the mechanical advance may have failed — see Step 5.

To test the vacuum advance, reconnect the vacuum tube and run the engine at around 3000 rpm. Shine your strobe on the timing marks and disconnect

the vacuum advance tube.

As you pull the pipe off, the moving mark should appear to return quite close to the static timing mark. If it does, the vacuum advance and retard unit is working satisfactorily.

If the vacuum unit appears to have stopped working, it may have just become discon-

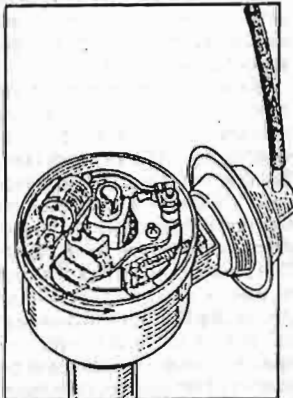
nected. In Lucas distributors the vacuum unit is connected to the baseplate by a spring which just slips over the top of a post (fig 2). Most other makes use a flat metal strap which is held on by a spring clip or circlip (fig 3). Check that the spring or link is in place and secure before you go out and buy a new unit.

### TIP

#### Suck it and see

If you do not have a stroboscopic light and it is not convenient to buy or hire one, try this method to test the vacuum unit.

Pull off the vacuum pipe from the inlet manifold and wipe it with a clean cloth. Remove the distributor cap and stand so that you can see the contact breaker baseplate. Suck the end of the pipe and look to see if the baseplate moves around by about half an inch. If it does, put your tongue over the end of the pipe to seal it. The baseplate should remain in the advanced position until you remove the pipe from your mouth and let the air



back in.

If you can suck air in through the vacuum unit or the baseplate does not move, you will need to replace the vacuum unit.

## STEP 2

## FIT A NEW VACUUM UNIT

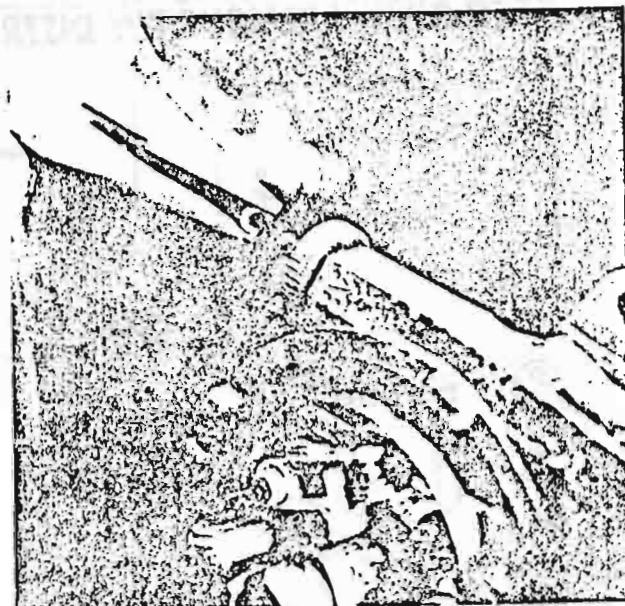
All vacuum advance and retard units look the same on the outside. It is the springs and spacers inside which tailor the unit to a particular engine. So do not be tempted to fit any old vacuum unit which happens to look like the one for your car. Buy a new one. It will pay for itself very quickly in petrol saved.

Lucas distributors have a vernier adjustment which both allows you to make fine adjustments to the timing and also holds the vacuum unit in the distributor body. A small circlip fits into a groove in the end of the adjusting screw. Remove the circlip carefully with a small screwdriver or a pair of fine-nosed pliers (fig 1). Then lift the end of the connecting link off its post and remove the unit by screwing the knurled adjuster right off the end of its thread. Watch for the spring plate and the spring located behind the knurled adjuster.

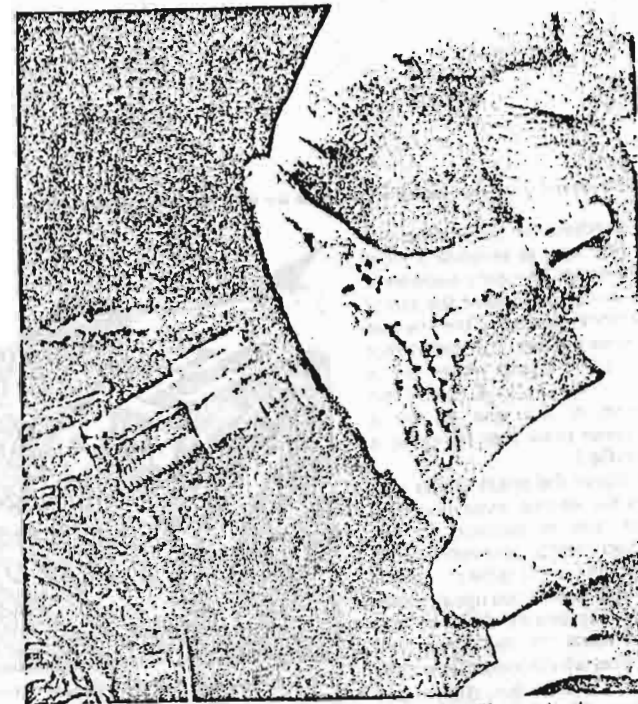
On most other makes of distributor the vacuum unit is secured to the side of the distributor body by a couple of short screws. Undo these and pull off the spring clip that holds the connecting link on to the baseplate. Lift the connecting link off its post if necessary and withdraw the unit from the distributor body (fig 2).

Fitting the new vacuum unit is a reversal of the above procedure. Make sure you check the tube connecting the vacuum advance to the carburetor for signs of wear. Particular attention should be paid to the rubber connectors at each end of the tube which should be a tight fit. Look along the length of the tube for chafing or air leaks. If you detect any signs of wear, replace the tube.

Now test the distributor with the strobe light, as described in Step 1, to make sure that the ignition timing has not been altered and that the vacuum advance works correctly.

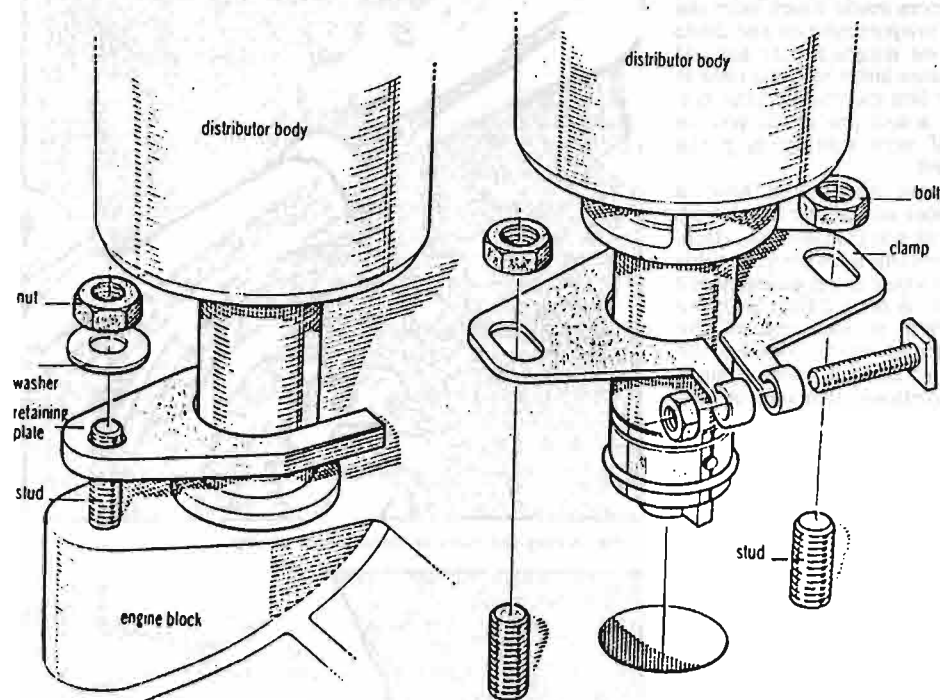


1. Removing the vernier adjustment circlip



2. Withdrawing the vacuum unit from the distributor body

## STEP 3 REMOVE THE DISTRIBUTOR

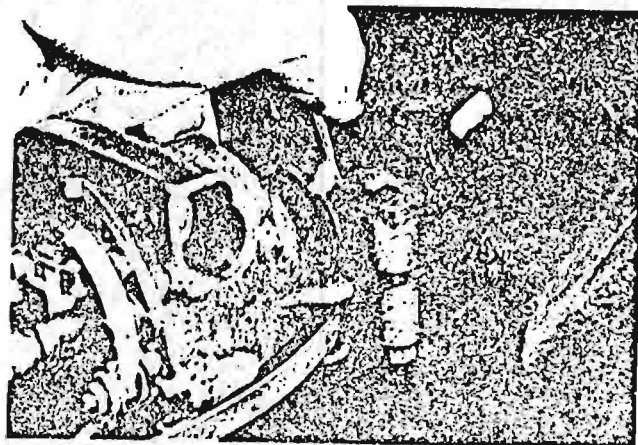


1. The distributor can be held in place by a retaining plate (left) or a clamp (right)

To overhaul the distributor, it is usually best to remove it from the engine. The only exception is if it is situated near the top of the block, in which case you can work on it in situ. The distributor is held in place either by a clamp that fits around the bottom of the unit or by a retaining plate that fits on to a stud (fig 1).

Remove the spark plugs and turn the engine over until the rotor arm is pointing to the contact which corresponds to cylinder number one. Remember that you usually look at the cap upside down so you must allow for this when you work out which contact is which.

Now mark the distributor body and the engine so that you can replace the distributor in exactly the same position when the overhaul is complete.

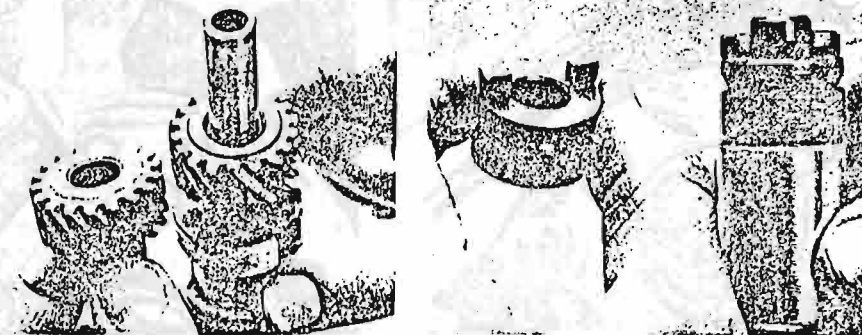


2. Withdrawing the distributor from the engine

Remove the nuts holding the distributor and withdraw the

body (fig 2). The body will be loose before you go any further.

## STEP 4 EXAMINE DRIVE GEAR AND BASEPLATE



1. Comparing new and old drive gear (left) and drive dogs (right)

You now need to examine the distributor closely to find out which individual components are worn. The test with the strobe light will have given some indication about its general condition, but there is no substitute for a proper inspection.

First examine the drive gear, or drive dog, at the bottom of the main shaft (fig 1). Any visible signs of wear -- burred spigots on the drive dog, or a broken tooth on the drive gear -- are indications that the drive gear should be replaced.

Mark the position on the distributor body so that you can replace the drive gear in exactly the same position later. Support the distributor in a vice or on blocks of wood and then tap out the pin that holds the drive gear on the main shaft. The pin is a tight fit, so use a drift or nail as a punch to drive the pin out (fig 2). Pull the drive gear off the shaft along with the spacer washers -- there will be washers between the distributor body and the drive dog, and also on the shaft inside the body (fig 3). Note the order in which the washers come off so they can be replaced in the same way. Then pull the main shaft out of the body from the other end.

A further likely sign for wear is in the contact breaker plate -- especially if the distributor is

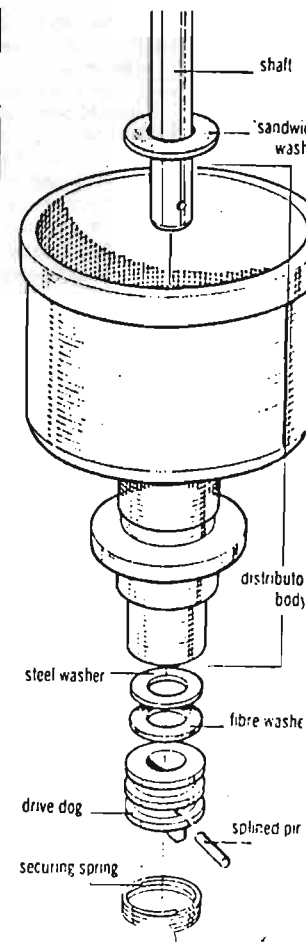


2. Driving the pin out

fitted with both mechanical and vacuum advance. Lift off the rotor arm and remove the contact breaker assembly and condenser -- see WW 10.

Free the vacuum advance spring, undo the two securing screws (fig 4), lift off the earth lead and then remove the contact plate (fig 5).

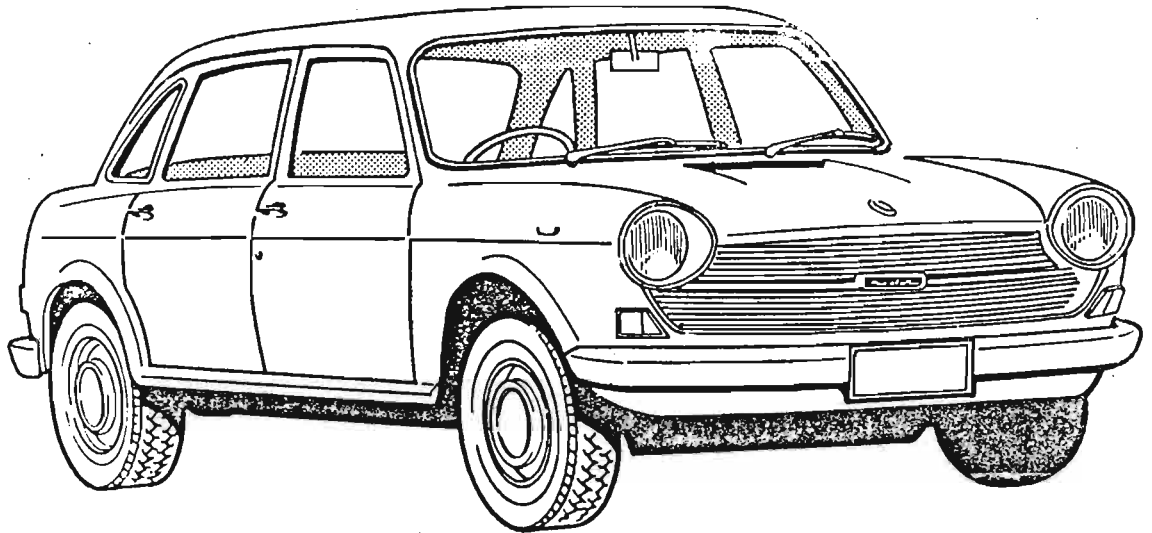
The contact breaker baseplate in fact consists of two plates -- one is held stationary in the distributor body, the other is moved by the vacuum unit. Hold the fixed plate with your finger tips and try to rock the moving plate from side to side with your thumbs. If the plate rocks it is worn. This type of wear is quite common -- particularly on Lucas distributors where two nylon buttons are



3. Spacer washers on the shaft



# AUSTINTASHUS



Number 9

AUSTIN 1800 CLUB NEWSLETTER

FEBRUARY 1989

The Wheels 89 event this year is being held on Sunday 12 February at the Rugby League Park, Donaldson Street, Braddon. Graham Brohan, who is the president of the *ACT Council of Car Clubs*, has invited us to participate in this event. He requests that any member who would like to display their 1800 to be at the Oval between 8.30 and 9.30 am on the day. There is no entry fee for entrants. I shall be displaying my Mkl Automatic and if anyone else wishes to do the same please give me a ring. This would be an ideal opportunity to publicize our club.

Included in this month's newsletter is an up to date list of spare parts available for sale, exchange or to help out in the short term. The list is compiled from phone calls and letters received from ex-1800 owners who wish to see the parts go to good use along with club members who can help out, if necessary.

USEFUL TIP. No doubt all of you have, at one time or another, had oodles of fun fitting the exhaust clamp to the manifold and exhaust pipe. As you know one needs three hands and triple-jointed fingers to accomplish this task. However, a solution is at hand — fit the two bolts into one-half of the clamp and tack-weld the hexagon to the clamp. This allows easier fitting of the other half of the clamp along with the added bonus that the nuts can be tightened without the bolts turning.

Enclosed is a revised membership list which includes new members. Colin McFarlane will be a valued member as he has been involved with BMC vehicles all his working life and, although now retired, still maintains and repairs over 25 1800s in the Blue Mountains area where he lives. He tells me there is nothing he does not know about the 1800 and has promised to impart some of his knowledge to the club from time to time.

David Rossiter has regretfully resigned owing to the sale of his Mkl. He wrote a nice letter which included his best wishes for the club along with a \$5 donation.

Expenditure was a little heavy this month due to interstate correspondence and costs involved in sending out the 1800 booklet to new members. Our current balance stands at \$16.



Anyone wishing to use the teflon product *Nulon* in their engine can purchase it at near-trade price courtesy of Len Eastwood. *Nulon E20* is short term and retails for around \$8.50 but can be bought for about \$6. *Nulon E30* is longer term but should be supplemented first with *E20* for 13 hours or 1000km after which *E30* can be used. It's good for 80,000km and is unaffected by oil changes. Interested members should see Darrell Rutter personally at *Commonwealth Motors*, Phillip, stating you are a member of the Austin Club.

A letter arrived from *Aion Products*, Bowral, promoting badges. Their products are high quality and they specialize in metal badges, lapel badges and embroidered items. Their prices also appear very reasonable. They specialize in cloisonne metal badges where the finished product is extremely durable. I have sent them a copy of our club logo requesting a quotation from them for both a grill-type form and an embroidered version. Will keep you posted.

As we go to press there is a meeting of the *ACT Council of Car Clubs* at Capital 7, Watson. As our club is now off the ground we should look toward registering ourselves and instituting a constitution in order to generally find out what is involved running a club. More details on the outcome of this meeting next month. [NOTE: A flyer for *Wheels 89* is included. If you could display it in your local shopping centre or similar it will help advertize the event.]

At last I can include a club leaflet promoting ourselves and a couple of copies are attached. I suggest you cut them in half and carry them in your car and pop a copy under the wipers of any 1800s you see parked in your travels. If you could photocopy more of these for your own use before you distribute them, all the better.

Sid Philbrooke rang me to say that in addition to the items listed in the spares list he also has two radiators and a rack and pinion.

Now to our next meeting and some good fortune. I visited the *Canberra Yacht Club* to enquire whether we could hold our next meeting there. They were very obliging and had no objections. Monday evenings were the most suitable for them as their restaurant is closed that day so I booked our club in for **7.30 pm on Monday, 6 February**. There is no charge and all they ask is that we help prevent the barman from falling asleep. I have taken the liberty of booking the club in on the first Monday of each month from then on. At last we have a regular time and venue each month. The lounge we are allocated is called the Dorothy Norris lounge and overlooks Lake Burley Griffin. Sounds good, doesn't it? See you there.

*SAFE AUSTINING*

*Mick*

... I am grateful for your quick  
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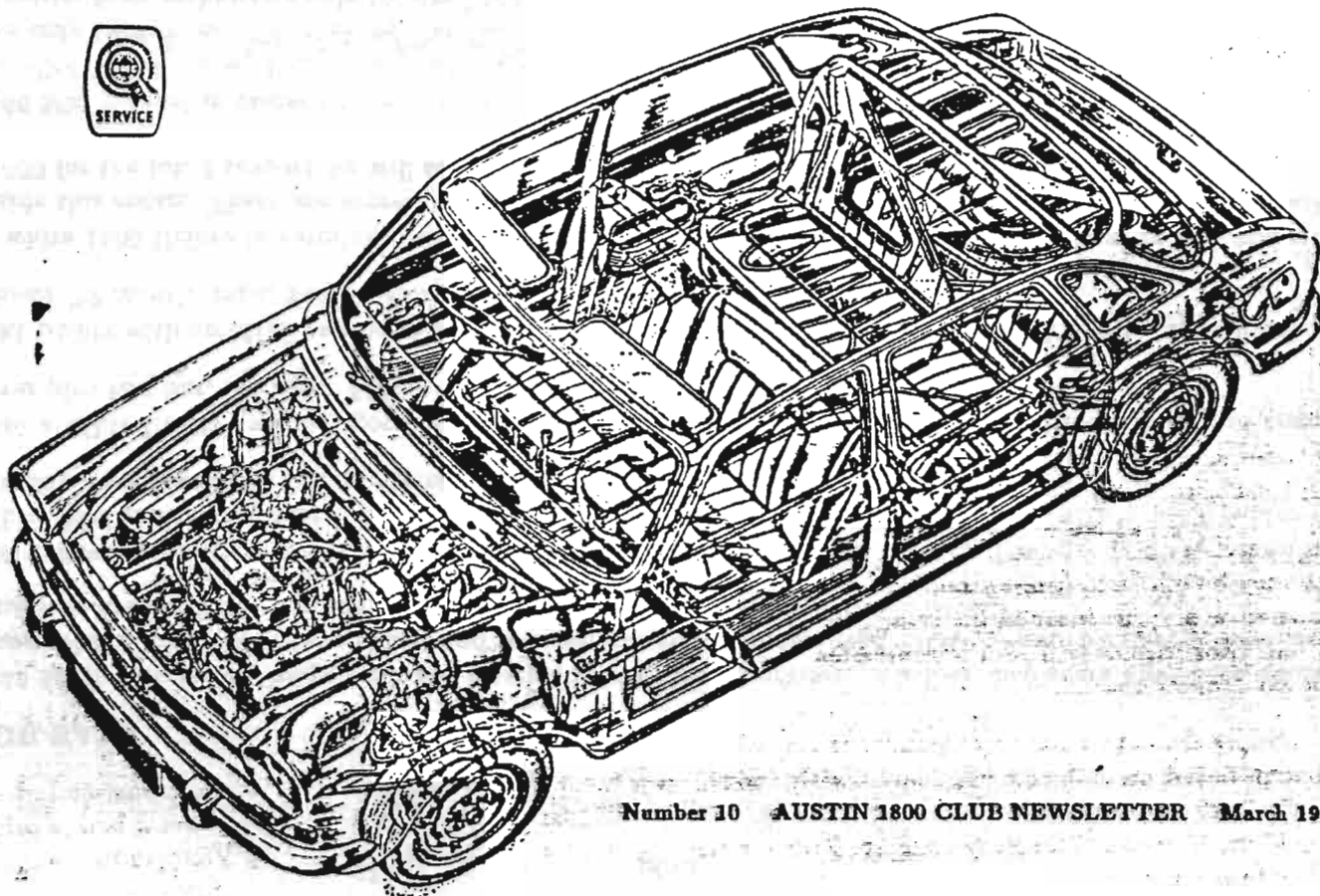
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Number 10 AUSTIN 1800 CLUB NEWSLETTER March 1989

Our new venue saw a record turnout of members which was excellent to see. Undoubtedly the move to the *Canberra Yacht Club* was the right one. Apologies were received from Don Thomas who had a prior engagement.

We welcome two new members to the club, one from interstate and one as a result of our windscreen leaflets:

**HAMISH** 57 Heathfield Road, Heathfield SA 5153 (08) 339 3217

**BURNETT-READ**

**JES KIRK** 74 Hurley Street, Mawson ACT 2607 862 484 MkII Sedan

Last month Len Eastwood and I attended the quarterly meeting of the *ACT Council of Car Clubs* and gained some useful information. Basically they are THE voice for all the registered car clubs in Canberra. Apart from raising money for charities by way of social events throughout the year they help with other matters such as registration of specialist vehicles, stamp duties, levies, etc imposed on valuable and vintage vehicles which, through a longstanding agreement, they help to allay (mechanical inspections and the like). For an annual fee of \$10 we can join this council and I proposed the same. The motion was carried by an overwhelming show of hands.

Besides organizing the *WHEELS 89* event this year, other activities the council scheduled are: Economy Run — 10 September, Breakfast Club Run — 15 October, All British Day — 6 November. Their next meeting is at 7.30 pm on Thursday, 20 April.

Incorporation of our club was discussed briefly and, though the incorporation proceedings tend to be a bit involved, we ought to consider it. Some basic reasons are:

- Should we participate in a display, event or similar and a member of the public suffer injury or damage by one of our vehicles, they could conceivably sue each member of the club. With an incorporated club they would have to sue the club as a whole.
- Display, rallies and similar events — organizers prefer the clubs attending be incorporated.
- Club funds are not liable for tax.

Last month saw us enrol on the *Life be in it* register. Another free plug we can avail ourselves, if you wish, is the *2CC Community Service Link*. What do you think? Ross Loftus is the guy to ring.

Perhaps the most important outcome of the last meeting was the introduction of an annual fee. Everyone in attendance agreed that we should and Tom Bray proposed a figure of \$30. A vote was taken and the motion was carried unanimously. However it was also agreed this was not to be introduced until our July meeting so as to coincide with the new financial year. We shall also need to elect a treasurer.

Contributions were received from Jes Kirk, Kathleen Phillips, John Evans, Colin McFarlane from Faulconbridge and Hamish Burnett-Read from South Australia. Our current balance now stands at \$61.

The *WHEELS 89* event on 12 February proved very successful in promoting our club. We displayed MkI and MkII sedans and Jonathon's MkI Utility. One car was shown-off camper style with the front seats laid back; another displayed the cavernous boot space. We also made up large printed placards outlining the features of the 1800 along with a blown-up copy of the cut-away profile of the 1800. Surprisingly, many people stopped to read these and made the usual comments on what a good car they are — roomy, comfortable, 'the best they had owned', etc. During the day I paid our annual subscription of \$10 to the *ACT Council of Car Clubs*.

With reference to the 1800 Centre in Victoria featured in the January newsletter we now have an address which may be of use to members when in the Melbourne area: 35 Porter Road, Heidelberg Heights, VIC 3081. An owner of an Austin 1800 in Reid, Mrs Forster, was recently in Melbourne and purchased a brand new turn indicator assembly from the centre for \$120. This figure, Mrs Forster tells me, is around half the price *orwood Motors* quoted.

*Aion Badges* replied to our correspondence regarding a club badge and quoted \$25 each for a 75mm diameter car badge based on soft enamel, coated with epoxy, on a brass base. The embroidered item was quoted at \$6 each. These prices were based on an order of 25 pieces. Most members considered the metal badge price as too high. However Tom Bray suggested we contact the *Austin Motor Vehicle Club of Victoria* to see if we could obtain some of their stickers with ACT substituted for Victoria. Good idea. I shall write to Pat Farrell and ask him to make enquiries with their printers to see if this can be done. Will keep you posted.

See you at the Canberra Yacht Club at 7.30 pm on Monday, 6 March.

Happy Austining;

Mick

## FOR SALE

1969 MkII Automatic, beige with red interior in excellent condition. All four displacers have been replaced along with a complete brake reline and a reconditioned cylinder head. The owner, Mr Capp, lives in the Singleton area of NSW and invites offers. Phone (049) 307 204 for further details.

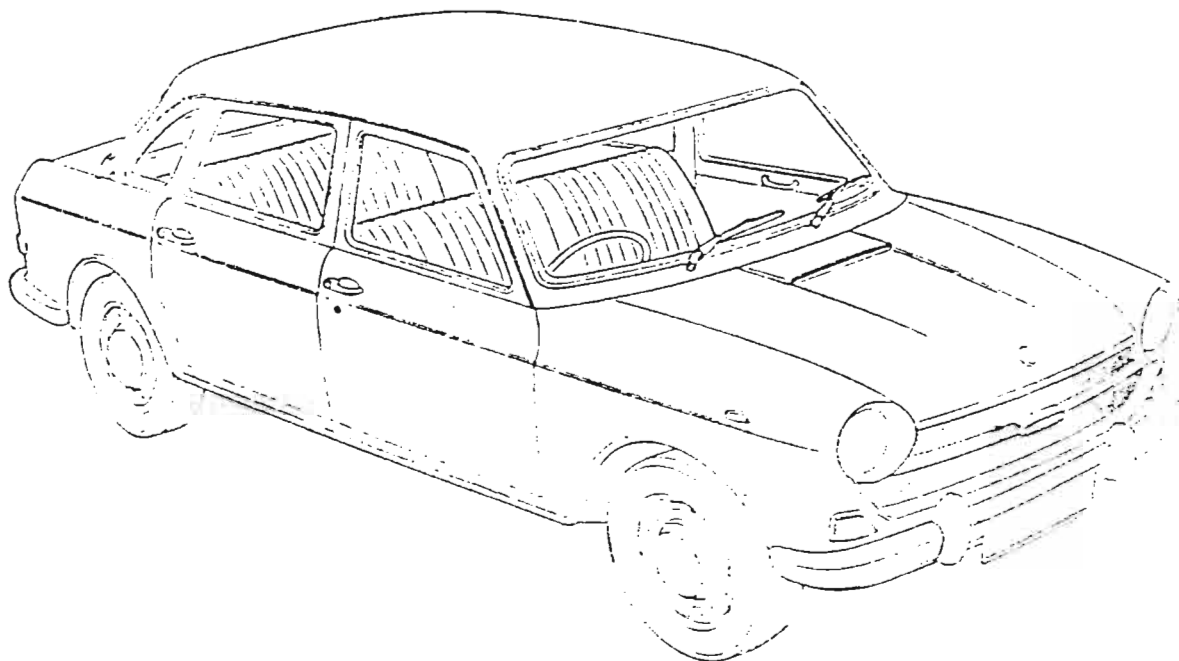
The following vehicles: Pale blue MkII (no motor); Maroon MkI (no motor); Pale green MkII (no motor); White MkI motor re clutch (no accessories); White MkII (no motor); White MkI with a MkII motor (top-cut off). Five tea chests full of spares (most parts).

Also a MkII Utility (white), good mechanically (stood two years), complete with timber rack and tonneau cover plus tow bar. No rego. \$1500. Contact Frank Gifford, phone 88 3340.

MkI Utility with an MGB engine. Completely reconditioned. New duco, carpets, seat and all mechanics. Mag wheels, 12 months rego. \$4000. Ring Jonathon Gifford, phone 88 3340.

A white 1800 Utility in running order; an 1800 sedan complete plus virtually a second car in bits and stored inside this sedan. These are stored in a shed on a property at Tarago and the owner, Terry White, is asking \$1000 for the lot. I suspect he will sell separately. He can be contacted on (048) 49 4587.

1966 MkI manual in tamarisk green with red interior. This car is in showroom condition and has not quite travelled 12,000 miles. All records available and mileage can be proven. Has been garaged all its life and has had only two owners. Serviced by the same garage all its life and is registered until January 1990. Genuine enquiries from enthusiasts only to Mrs Longhurst, phone (0645) [redacted] [Cooma].



Number 1

AUSTIN 1800 CLUB NEWSLETTER

APRIL 1988

Our first club meeting at the Canberra Yacht Club was another success with very good attendance. My apologies for not attending: some urgent family business arose which meant I had to go to Townsville at very short notice.

We are pleased to welcome a new member to the club:

Dennis HARVEY 7 McCarthy Road, Hall NSW 2616 30.2479

Colin McFarlane paid me a visit in his 1800 whilst he was in Canberra recently and we had a very interesting chat, exchanging pieces of information and discussing the 1800 in general. As you know, Colin had his own business before he retired and, until recently, repaired and serviced well over twenty 1800s in his area, 1800s which he sold originally. Although he still has a very extensive workshop for maintenance and repairs, he now restricts his activities to servicing only.

He left me a parts list which is included with this newsletter. You may note a couple of items can be obtained in Canberra a little cheaper, for instance, a water pump — around \$57 exchange at *Morwood Motors* a few weeks ago. Generally his club prices are good. Colin will be pleased to supply members at the club price plus post and packing.

How many of you knew a four-wheel drive Austin 1800 existed? Most probably none. Like me, I wouldn't have thought it possible — but it is. Pat Farrell of the Tasmanian Austin Motor Vehicle Club included a photocopy of this vehicle with his last letter to the club, and I have reproduced it here for you.

The following advertisement was taken from a Sydney newspaper last month: CV joints, all makes: Ph 642.3686. Again thanks to Pat Farrell — he informs me the last time he enquired about the price of a CV joint it was \$170 plus tax. That compares more than favourably with *Morwood's* price of \$300.

Now for another surprise — namely, the *Austin-Morris 1800-2200 Owner's Club*. I did know of their existence through Nairn Hindhaugh of the *Queensland Austin Motor Vehicle Club* who told me he would be giving them our address, but it was through Pat Farrell that I received an application form for membership. This club is in Wales in the UK and, since learning of their address, I have written to them, advising of our own existence. I included a copy of the 1800 booklet, gave them a rundown on the 1800s in Australia, and made brief mention of the Kimberley and Tasman models, of which they are probably unaware. Also included were a couple of recent newsletters. Their club, it seems, only predates ours by one month, and I am sure, once they contact us, a very fruitful affiliation will result. Hopefully the club will receive a reply before the next meeting.

On the subject of car badges I again wrote *Aion Products* requesting a quote on a smaller quantity of a metal car badge. Because of the extensive hand labour involved they cannot produce one for under \$83, so it seems the original quote of \$25 each for a minimum of twenty badges stands.

Thanks go to Kathleen Phillips for her efforts in producing a membership application form for the club. We will all peruse this and discuss the Club Assistance Plan at the next meeting, therefore it is requested that all members make it along to the Canberra Yacht Club, Monday, 3 April, 7.30 pm. See you there!

## SAFE AUSTINING

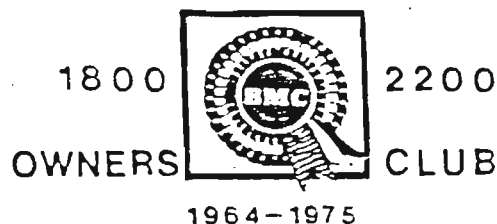
Mich

For Sale

1968 Austin 1800 MKII Automatic cream in colour. Driveable with 4 good tyres and a spare engine less cyl. head. Car may be seen at 7 Sutton Place, Farrer and/or contact Shaun Breeze at work on Ph 654.851. Asking price \$4700.

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## AUSTIN - MORRIS



Formed in April 1988, exactly 24 years since the first Austin 1800 was unveiled to the public, the club caters for the MKI, MKII and MKIII produced by Austin-Morris between 1964-1975, and intends to 'take under its wing' those Wolsley variants so obviously a part of the 1800 family.

We offer the owner/enthusiast a friendly and informal service. Through the club magazine *Landroo News* we hope to offer technical tips, readers' letters, articles on the car's history, news of events, etc. One of our aims is to help locate sources of spares for our cars.

The club will endeavour to attend as many of the *Classic Car Shows* as possible during the year and shall encourage individual members to attend as many local shows as they can.

Do consider joining the club and help to contribute to its future, and to the future of one of Issigonis' best designs — the 1800.

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The following extract was taken from 'The 1100 Companion'

As for the 'east-west' engine layout, the theoretical attractions of driving the front wheels from a front-located engine transmission unit are:

1. The engine and transmission occupy a space so restricted by the need for wheel clearance on full lock that it is of limited value for the alternate carriage of luggage.
2. For a given length of car the cubic content of the rear luggage boot is considerably enhanced, as there need be no intrusion from a rear-axle beam. The absence of this also provides space beneath the rear seats.
3. As there is no intrusion by the clutch housing, gearbox or propeller-shaft, the floor can be set at ground-clearance level, and from this good headroom given within low overall height.
4. The reduced height improves maximum speed by diminishing frontal area, and this enhances stability by lowering the centre of gravity, and lessening roll angles.
5. On straight roads directional stability is improved by the forward position of the centre of gravity in relation to the centre of wind-pressure.
6. On corners maintained power through the tyres promotes the under-steer condition best suited to the technique of normal drivers, but, in emergency, shutting the throttle will bring the car back sharply on to a closer radius—that is, to its own side of the road.
7. In extreme conditions of ice or snow the car will follow the direction in which the front wheels are steered, even in conditions of wheel-spin, provided any adhesion remains.
8. By comparison with front-engine and rear-driven cars, adhesion on the driven wheels is improved in that they carry considerably more than half the laden weight.

There are four major reasons why Alec Issigonis did not hesitate to apply his ADO 15 (mini) philosophy to the ADO 17 (1800). In all the years and millions of miles experience since the first ADO 15 Mini took to the road in August 1959, it has been proved that:

1. An all-direct drive from the crankshaft to the final drive does not bring with it objectionable noise, even when big mileages have been reached.
2. That no disadvantages attend a common casing and a common lubricant for the crankshaft, the gear-shaft, and the final drive.
3. That the use of Houlton elastic inner universal joints gives a sweet, cushioned drive with absolute reliability.
4. That the employment of Birfield constant-velocity joints (built under Rzeppa and Gull patents) confines reaction transmitted to the steering wheel to that arising from the self-straightening properties of the tyres, and permits an angle of lock which provides an acceptable turning circle.

THE FOLLOWING INFORMATION  
IS FOR YOUR INFORMATION

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Restarting on an icy slope—no trouble. Altered petrol tank and spare wheel well are the only visible differences from standard.



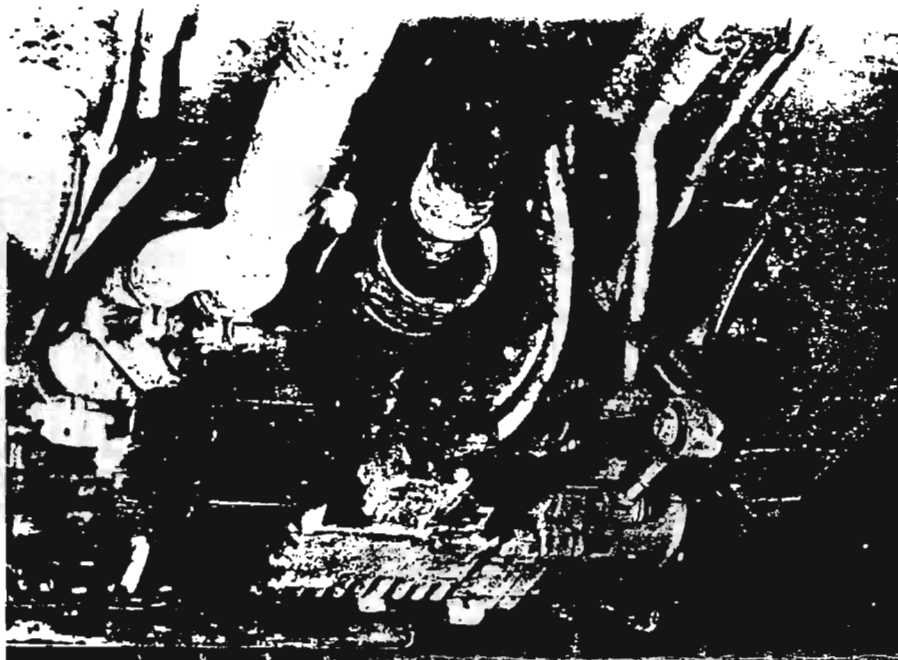
IN THE past few years I have described several practical applications of the Ferguson four-wheel drive system in *Motor*. Except in the case of the Ferguson car—which was designed from the word “go” as an all-wheel-drive vehicle—these have consisted of adding front drive to cars normally driven through the rear wheels.

I have just spent a week-end with a car representing the opposite technique—adding rear drive to a front-wheel-drive car. The model concerned is an Austin 1800 and I should make it perfectly clear that the conversion was carried out purely as an engineering exercise designed to investigate the problems involved. The car I drove was in no sense a prototype and you will find nothing like it in Austin catalogues at the next Motor Show.

In one way, the problem was an easy one as there was no question of finding room alongside the engine for a forward propeller shaft and final drive or of threading half-shafts through an existing suspension system to drive steered wheels. Against this were the equal or greater problems of finding a spot for a power take-off (especially with an east/west engine), arranging a rear propeller shaft under a floor not designed with anything of the sort in view, and adding a final-drive unit and half-shafts at the rear. In practice, the whole thing has been done so neatly that it might almost have been part of the original design. The amount of what engineers call “cutting and shutting” has also been kept to a minimum.

The layout is illustrated in the accompanying pair of drawings which show the scheme in plan view and side elevation. The BMC 1800 engine-transmission unit is unchanged except that the transmission casing is modified to accept a four-wheel drive unit and a pinion housing replaces the normal cover.

The standard final-drive gear is replaced with a gear of equal size in which the centre is modified to accept two epicyclic differentials. In the first of these (which acts as the centre differential) the drive from the main gear is taken to the planet wheels which pass it on respectively to the annu-



Above: The modified sump and gearbox casing, and the power take-off to the rear wheels.



Left: This view shows the rear drive shaft arrangement as well as the revised fuel tank and spare wheel housing.

## 1800 x 4

### Ferguson four-wheel drive on Austin saloon

by Harold Hastings

lus and the sun wheel; owing to the differences in diameter, this provides an unequal torque split between the front and rear wheels. For reasons which will be discussed later, approximately 60% of the torque is applied to the front.

The second differential takes its drive from the annulus of the first and splits the front-wheel torque equally between right and left-hand wheels; this is achieved by using an epicyclic differential of the type having the planet wheels in meshed pairs, with one wheel of each pair engaged with the annulus and its mate engaged with the sun wheel. Relative movement between the planets of each pair cancels out the effect of diameter differences in sun and annulus and gives the desired equal torque split.

Limitation of differential action between front and rear is achieved by the special Ferguson system which, in principle, consists of connecting the front and rear by additional gears, the ratios of which conflict with the main drive ratio. The conflict is resolved in normal running by free-wheel clutches which permit over-run to take place. When, however, front or rear drives tend to speed up, this is permitted to the extent allowed for by the discrepancy in ratios; at that point, the appropriate free-wheel clutch locks and no additional

difference in relative speeds is possible, although the percentage difference at the lock-up speed can be continued indefinitely.

Normally, two control units are provided. One limits front spin (or rear locking, which would produce similar speed differences between front and rear); the other controls rear spin (and front locking). In this case, however, it was decided to simplify the installation by using only one control unit, this taking care of front spin and reducing the risk of rear locking.

Applying nearly 60% of the torque to the front wheels is the exact opposite of what has been done in previous installations but these, of course, have concerned front-engine rear-drive cars. In the case of the 1800 the opposite torque split was chosen for three main reasons: 1 the 1800 is a predominantly nose-heavy car; 2 the existing front-wheel drive is already capable of taking 100% of the torque and advantage was taken of this fact to save weight on the rear drive; and 3 maintaining a preponderance of torque on the front meant that the excellent handling of the car would not be basically changed.

The choice of this torque split also led to the decision to use a single-control unit since it was felt that with the torque and

weight distribution involved, neither front-wheel locking nor rear-wheel spin were likely. It was also decided to omit the Maxaret.

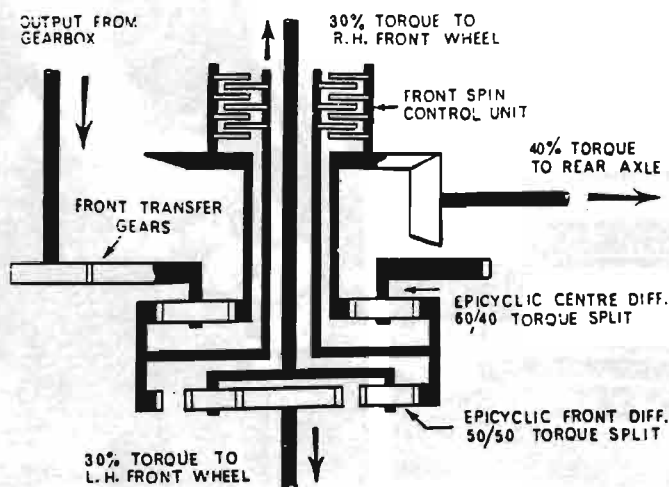
The actual front/rear torque split at the central differential is 64/36, but when the effect of front and rear final-drive ratios are taken into consideration, this gives a ratio at the wheels of 61/39. The necessary front/rear speed difference to keep the control unit clutch free under normal running conditions is obtained by using different final-drive ratios at front and rear. At the front, the standard BMC ratio of 3.88:1 is retained but the combined ratio of the two pairs of bevels in the rear drive is 1.158:1—in other words, a front spin allowance of 15.8%.

A beauty of the rear-drive arrangement is that it has been possible to provide a substantial step down in propeller-shaft speed. Thanks to a 35/19 forward bevel cluster, the shaft speed is reduced by nearly half, with the result that problems of vibration and balance are greatly reduced. At the rear, moreover, a bevel ratio of 15/32 makes it possible to use a crown wheel of very modest size. The actual rear ratio is 4.493 and the resultant overall ratio (front and rear in combination) 4.103:1.

As will be seen from the general arrangement drawings, the short pinion shaft at the front slopes down relatively sharply to the forward universal. This has been done to enable the propeller shaft line to be accommodated in the shallow tunnel in the 1800 floor (normally occupied by the exhaust pipe) and to avoid modifications to the forward foot ramp. The angle involved is 12½° in the static condition and this is taken care of by a special Hardy Spicer offset-sphere, constant-velocity, plunge-joint designed to cater for a permanent change in alignment rather than temporary variations due to relative shaft movements. The latter do not occur in this case as a result of suspension movements, but slight changes in angle can occur when the transverse engine rocks on its mountings owing to torque variations.

Because of the relatively low speed and low torque factors, propeller shafts of only 1½-in. diameter are possible. They are supported by a centre bearing secured direct to the body by metal straps and the rear shaft incorporates two Hook joints. The rear final-drive casing is bolted via rubber mountings to a cross member welded to the floor and there is a rubber-mounted torque arm attached to the floor just forward of the axle. Except for the actual final-drive gears, the casing, differential and half shafts are mainly Mini Cooper parts which, of course, are easily able to withstand the loads involved. The ends of the standard 1800 trailing arms are modified to accept new hubs but the suspension itself is unchanged.

The only other modifications consist of raising the steering rack slightly, moving the exhaust line to one side with a slight loss in ground clearance, swinging the fuel tank through a right angle to provide clearance for the nearside half-shaft and



Diagrammatic layout showing how the drive is taken from the standard 1800 transfer gears and distributed to the front and rear on an approximate 60/40 torque basis. Only one control unit is used and the Maxaret braking system is omitted.

transferring the spare wheel to a vertical position inside the boot.

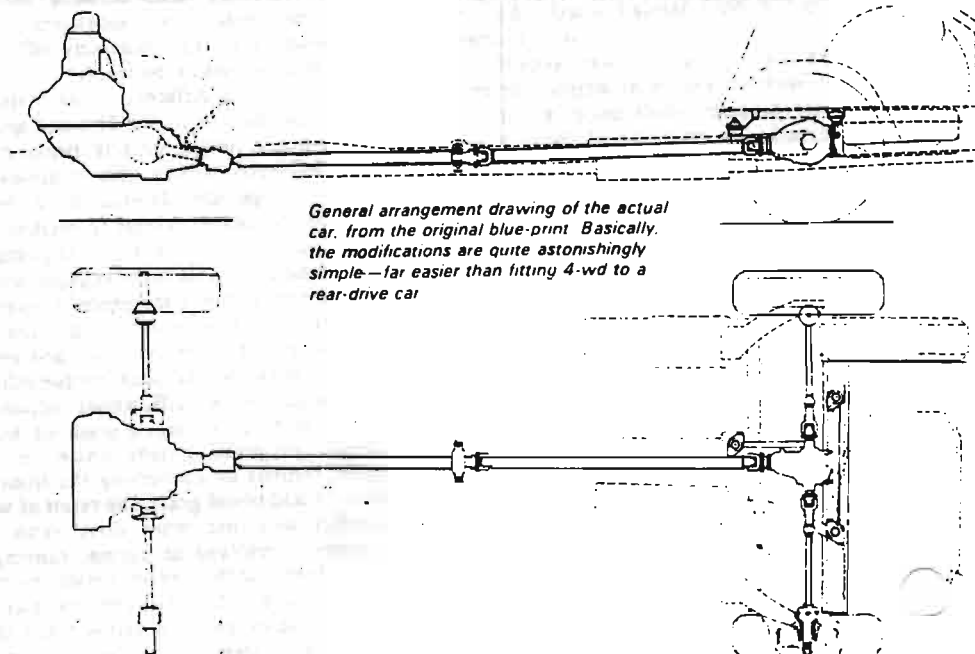
In practice, the installation has involved a distinctly smaller weight penalty than usual, adding 56 lb. to the front of the car and 78 lb. to the rear, giving a total addition of 134 lb. compared with a usual of around 200 lb. In its converted condition, the weight distribution is little changed, giving a static laden front/rear ratio of 56/44.

A run of some 230 miles in the converted car left a very favourable impression. The conversion seemed to me to give all the normal advantages of four-wheel-drive, most of the advantages of the full Ferguson system and no penalties whatsoever in handling. Indeed, it is doubtful if any regular 1800 driver would know the difference if this particular example were handed over without telling him that it was the one and only 1800 in existence which has a rear axle! He would, moreover, need to be rather observant as the only external give-away is a glimpse of the rearranged tank and spare-wheel well peeping below

the rear bumper.

Unfortunately my opportunity to drive this car came on a sparkling winter day when most of the snow had gone, but I did succeed in finding an "Unsuitable for Motors" lane where there was still a good smattering of snow and, more important, the deep ruts were filled with smooth ice. Stopping and starting on this gave absolutely no trouble and called for no finesse in engaging the clutch.

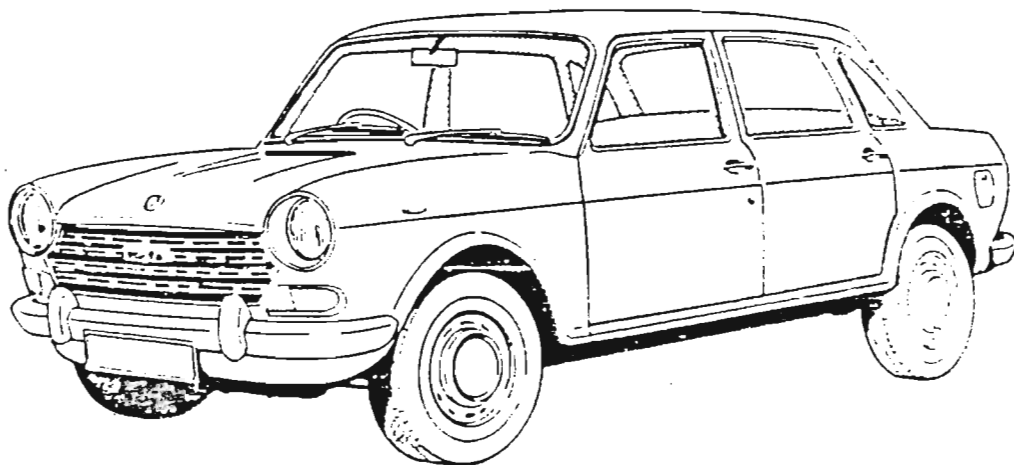
Because this conversion was carried out purely as an exercise, cost cannot be assessed, but if it were ever put into substantial production, the cost would be considerably less than with other installations, thanks both to the simplification of the system and the extensive use of existing manufacturers' parts. In addition to its well-known advantages in traction, the system might also have points as a means of accommodating a much more powerful engine in an 1800 because it would enable the extra power to be put mainly through the rear wheels, leaving the front drive with its existing very ample safety margin.



General arrangement drawing of the actual car, from the original blue-print. Basically, the modifications are quite astonishingly simple—far easier than fitting 4-wd to a rear-drive car.



# LANDCRAB



Volume 12

Canberra and District Austin 1800 Club

May 1981

The first thing you will notice this month is the name change to our newsletter. Landcrab is by no means perfect and ideally suits the 1800. I had planned early on to make the change but waited until our 10th anniversary! We have steadily increased our numbers over the past year and, although we are not yet 12 in fact including our interstate members, we can safely say we are firmly established.

The April meeting saw 11 of us turn up, including 2 new members, one of which hails from NSW (more to introduce him later):

George PARKER

3 MacAdam Street, Page ACT 2614 54.1253

MkII Auto

Andrew DOWNING

PO Box 1, Huskisson NSW 2540

MkIII Manual

Apologies were received from Bill Wheeler who was unable to attend due to eye problems. The meeting included the same old faces and it would be great if we could see a few more members roll up, even just now and then.

For those of you who didn't know, one of our members was victim to a vandal attack on his 1800 recently. Last month Len Eastwood's 1800 was taken from where he lives — all the windows were smashed, including the sun roof; the stereo radio, CB and cassette tapes were wrecked. Not content with this wreckage, they tore into the console, dashboard, speedo and ripped out the wiring. Fortunately they were then disturbed and fed: Len managed to get his car back without any further damage, but most of his tools were stolen.

When two of our club members learned of this (Bob Hull and Andrew McGregor), they helped Len procure replacement windows, parts and spent many an hour helping Len repair the damage. Fortunately, the engine was untouched and Len's car is now back in one piece. Both Bob and Andrew deserve our recognition for their *esprit de corps*.

Just prior to last month's meeting we received our first correspondence from the *Austin-Morris 1800/1300 Owners Club of Wales* in the UK. Their founder member is Bill Fraser who runs the club. He wrote a long and interesting letter outlining their beginnings, aims, objectives, members and some of their cars. They differ from our club in that they cater for ALL 1800s, including the Morris, Wolesley AND the Austin. Additionally, their models include the MkIII and 'S' models — not imported into Australia — and spans 11 years. Included in their correspondence was their first two newsletters (published quarterly), photocopies of sales brochures, windscreen postcards, an application form for membership, membership card, and some photographs. One of these photos shows Bill's immaculate looking Wolesley 1800. Their club is just on a year old and predates ours only by one month. [All material received from other clubs is always available for viewing at our club meetings.]

Although a bit belated, our constitution and membership form have at last been drafted. George Parker

...entered his services as club treasurer; he has prior experience and involvement with club committees.

The current balance of the club's fighting fund (prior to mailing this newsletter) stands at \$1, the lowest it has ever been. At our next meeting we will have to pass the hat around unless, of course, anyone wishes to pay next year's fee (\$30 for ACT and district members) in advance.

Andrew Downing, currently of Sydney and owner of an Austin 1800 MkIII, was in Canberra the weekend of 11 April and rang me, asking if I would like to see it before his return to Sydney. No guesses as to my answer. With less than an hour's notice I rang around informing as many members as I could.

For those of us who met Andrew that morning, we were privileged to inspect this beautiful specimen. The car is in superb order, Andrew telling us he had just rebuilt the motor to MG specifications and just finished tuning it. The engine sported twin SU's suggesting that it could get up and go — IT DID when I was given a trial drive later. Being an imported English model there were quite a few differences:

Non-reclining seats; quartz-halogen headlights (could be non-standard single Girling master cylinder and split system); inertia reel seat belts; a standard stainless plastic handles (Range Rover); I suspect a door coverings of vinyl and not metal; a centre console steering wheel with horn; stronger turn indicators; radiator front vents; bonnet release on the left; interior mirror; headlining; stronger engine to radiator plate; top outlet goes to L/H side of radiator and outlet a stronger casting; alternator lower pulley; regulator and bracket with provision for fitting an air-conditioner (or similar takeoff a foot lower); 17" wheel trims same as MkII.

The differences are quite varied as you will agree. I still think, though, the Australian 1800 is generally a better finished off car.

As I have mentioned that elusive garage in Kiama, the one with the supposed stockpile of 1800 parts. IT IS THERE. Addison's Garage is located on the main highway on the southern edge of town. It can easily be spotted with the name 'Austin' set into the brickwork above the garage.

Attached to this newsletter is a list of some UK prices of BMC 1800 parts — supplied by our Welsh counterpart. The comparison of prices with ours is surprising. The prices listed are in UK currency and the rate of exchange is approximately 47P to the Australian dollar.

The next meeting is Monday, 1 May. Safe Austining.

Mick

FAIR

A.C.T.

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←  
Ask for Mark Bolin.  
Tell him you are an  
Austin club member.

**FOR SALE** Austin Tasma. with 1800 engine in running order. Motor reconditioned by Morwood Motors about 2 yrs ago. Motor runs well but needs new water pump; is an early MkI (no fuel pump). Car unreg and in Florey. \$150 o.n.o. Ph Mick 82.5262 for address.

**GIVE AWAY** 2 Front brake discs (rusty but good)  
2 MkII (manual) driveshafts  
Pair MkII front swivel hubs. Ph 82.5262



## 180

\* Prices include Post and Packing \*

[illegible]



Lookers GROUP



Nelson Street, Bradford BD5 0DY Tel: Bradford 722271

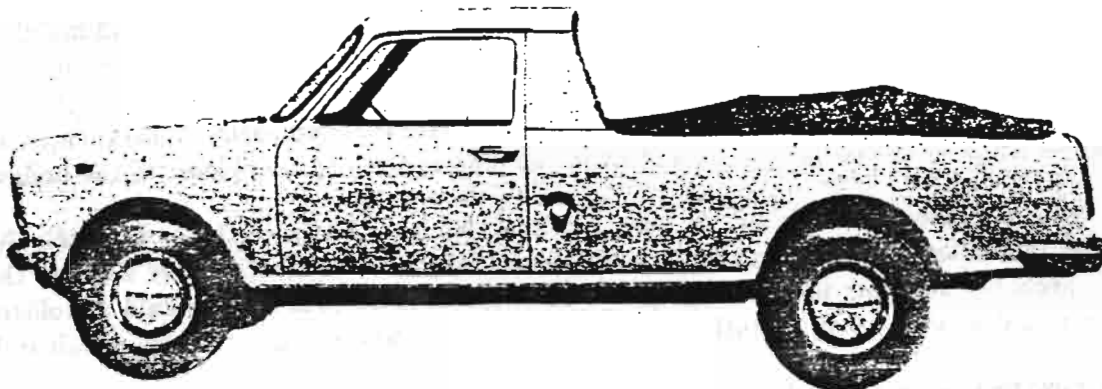
All parts from LOOKERS for the E.M.C. cars catered for by this club will be offered at 20% discount.(Ask for Bill Richards or extension 235, and quote your membership number.)

I have just received a 476 page parts list from Ford and have picked out a small selection for this magazine. It is the same for future issues.

PART NO.	DESCRIPTION	
1506	MOLDED BOWSER	45.00
1507	A/H	45.00
367	WIND FRONT L/H A/H M.I.	45.00
3006	DOOR .. R/H A/H M.I.	45.00
3007	DOOR .. L/H A/H M.I.	45.00
3236	MOLDED .. CHILLER	45.00
1411	HEATER M.I.T.H.	45.00
1463	LAMP REAR A/H M.I. R/H	45.00
1466	LAMP REAR A/H M.I. L/H	45.00
6335	WINDSCREEN WIPER SWITCH	45.00
5750	HEAD LAMP KIT	45.00
5791	..	45.00
2583	AIR CLEANER	45.00
1643	REAR ENGINE MOUNTING	45.00
1645	FRONT L/H	45.00
297	ENGINE SHOCK ABSORBER	45.00
3522	DEFLECTOR WIND TO DASH	45.00
4063	HEATER ROSE	45.00
4511	GEAR CABLE	45.00
7112	BACKSEAT INCH KIT OUTER	45.00
7113	.. INNER	45.00
7114	BOWSE RUBBER	45.00
7115	CALLIFER R/H	45.00
7116	BATTERY CLAMP	45.00
5015	DUCT TUNNEL	45.00
166	HANDLE WIND	45.00
175	RADIATOR	45.00
3061	ACCELERATOR CABLE	45.00
3578	FUEL TANK	45.00
5074	OUTER STILL R/H	45.00
4480	.. L/H	45.00
4481	FRONT DOOR LOCK	45.00
7167	IGNITION SHIELD	45.00
2116	..	45.00

Disregard these parts.





Number 13

Canberra and District Austin 1800 Club

June 1989

The May monthly meeting saw an average attendance and attracted two new members:

Ray & Joan WOODBRIDGE	73 Morgan Crescent, Curtin ACT 2605	82 3504	MkI Manual
Lyn KNOBEL	6 Salter Place, Torrens ACT 2607	866 995	MkII Automatic

Apologies were received from Bill Wheeler and Bob Hull. Two other folk who wish to join our club:

Peter HARDING	12 Darlot Place, Kambah ACT 2902	310 167	MkI Manual
Alan ROHAN	4 Leche Place, Lyons ACT 2606	852 936	MkII Manual

Peter Harding has done much work in converting the *mechanicals* from a MkII into his MkI and hasn't finished yet. He is very keen to enter his 1800 in a future *Bourke to the Black Stump Bash* and is currently looking hard for a sponsor. It is very unlikely that Alan Rohan will attend club meeting as our venue clashes with an already committed club commitment elsewhere.

Len Eastwood and I attended the recent quarterly meeting of the ACT Council of Car Clubs on 20 April. \$290 was collected at the gate during the WHEELS 89 event last February. Cheques for \$1450 were each presented to the Royal Life Saving Society and SHOUT. The proposed date for the WHEELS 90 event is 10 February. The next meeting of the ACT Council of Car Clubs is 8 pm on 20 July, to be held at Capital Television, Watson.

The Mini Club is organising a Bush Dance out at Hall on 27 August and we have cordially been invited. The cost will be minimum and will probably include a buffet-style meal. Further details should be known by our next meeting. Sounds like it could be a good evening out.

Whilst on things social — how would you like a game of Putt-Putt Golf? For a group of ten or more the cost could be \$4 for adults and \$2.50 for the kids. Further details are to be had from George Parker on 541 253

For those of you who do not have a workshop manual for the 1800 — here's your chance. The cost is \$10 and any interested club member should place their order with George, ringing him on the above number.

One of our out-of-town members, Ian Davey of Goulburn, plans to upgrade his MkII to performance level. Anyone who can help with procuring twin SU's, MGB camshaft, extractors, competition clutch and the like should let him know. I'm sure he would also appreciate any hints or tips you may have. Ian's address appears on the up to date membership list included with this issue.

Also enclosed you will find an article extracted from a recent *Car Fix It* which describes the 1800 group of vehicles and what to look for when buying secondhand.

I am told there are currently a few 1800s in the wreckers yards. ACT Wreckers and L&A Spares of Queanbeyan have five between them, including a ute. Parkwood Wreckers also have four or five which are well worth looking at.

With reference to the differences between the MkII and MkIII listed last month, the most important modification was omitted, namely, that the MkIII dispensed with the gearchange cables and utilised a rod system similar to the mini.

displacer pipes tend to chafe against the bodywork and should be checked. It appears there were 2 sizes of strut (the rod between the displacer and suspension arm), the shorter one found mainly on the MkI where, in many cases, an extra spacer was fitted to the rear of the displacer. On the MkII no spacers were fitted as the strut was longer and therefore not required. Over the years and in the course of the inevitable suspension failure displacers and struts were mixed when effecting repairs with secondhand parts. Consequently, MkI displacer with the spacer — AND — the longer strut resulted in the pipe curving around closer to the bodywork.

Did you know a Holden oil filter will fit onto the MkII engine? However this is definitely NOT recommended because the 1800 filter has a one-way valve and thereby retains the oil in the filter whereas the Holden one does not. This probably accounts for the large price variation. It is obvious that, should a Holden oil filter be used the engine would be starved of oil until the filter filled with oil and could very easily result in bearing damage.

Our club now receives a copy of the MG Club's monthly magazine and Laurie Gardner of the Mini Club has promised the same. These, together with all available literature, are available for viewing at each club meeting.

The metric conversion stick-on labels for the speedometer (mentioned in a previous newsletter) are still available from Premier Instruments, Badham Street, Dickson, and cost \$2.

Len Eastwood has procured another contact for us in the way of radiator servicing. Kevin's Radiator Service will look after us should we have any radiator problems: enquiries should be directed to Peter, telling him you are from the Austin 1800 Club [phone number 478 707].

Included with this newsletter is the membership application form for 1985-86 with details of the club as a guide on the reverse. Fees will be accepted at the next meeting. You may wish to pay in instalments as Tom Grainger and Kathleen Phillips have done, or you may pay it in one go which Kay and Joan Woodbridge did. The choice is yours.

You may or may not know that in this wonderful capital of ours, in the National Library, are copies of every morning journal ever published in Australia. These can be viewed any day of the week for free and, as a bonus, you may photocopy any article for a modest fee of 10¢ per page. Len Eastwood and I spent a very rewarding morning there recently gathering 1800 information which has been added to our library.

The next meeting will be at 7.30 pm on Monday, 4 June, at the Canberra Yacht Club. See you there. Safe Austining,

Mick

#### Forthcoming Events

The Peugeot Association of Canberra plan an endurance run to Cameron's Corner 10-18 June and invite other car clubs to participate. For further information call Peter Flanagan, ph 884 246.

The MG Car Club advises that a swap meet is to be held in Goulburn on the weekend of 22/23 July. Further details are to be had by phoning Don Brown on 49 6546.

The Porsche Club of Canberra has offered to organise the Economy Run on 10 September and more details will be known at the next meeting of the ACT Council of Car Clubs.

There is to be a French Day held on the lawns of the Old Parliament House on 16 July, part of the French Bicentennial celebrations.

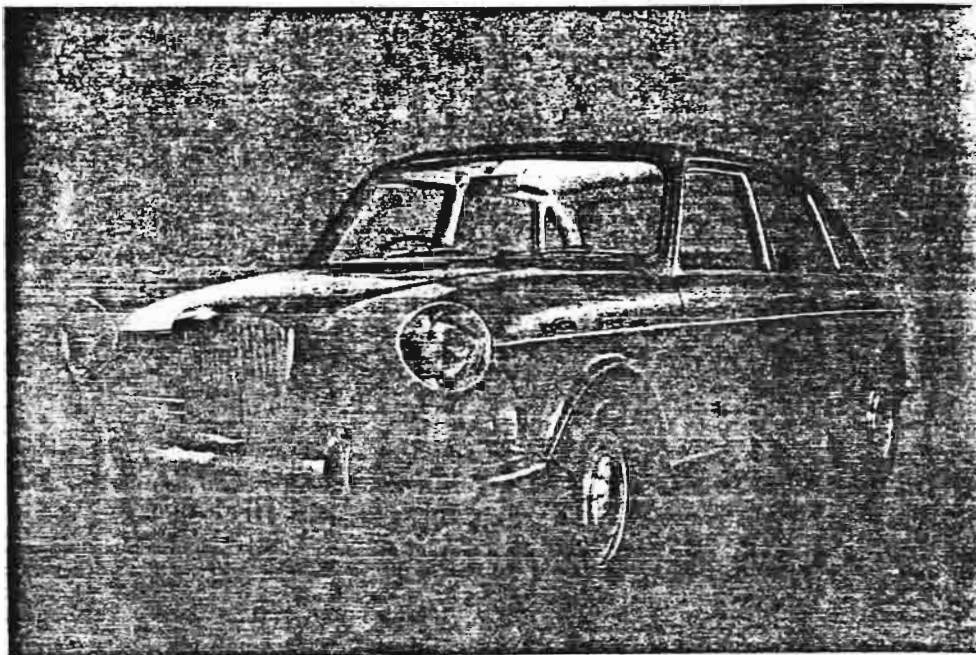
The Volvo Car Club will be organising the Breakfast Run this year on 15 October. This event normally commences at 8 am and consists of approximately a half-hour run, with the host club organising a barbecue afterwards.

The All-British Day is to be held on 5 November.

**FOR SALE** 1965 Austin 1800 MkI. Manual, new engine, pale green in colour, long rego, immaculate condition, \$2500. Phone: Margaret Whalley (065) 598 596 after hours (Port Macquarie).

**WANTED** Austin 1800 Ute. Must be in exceptional condition. Top price will be offered. Contact Penn Bradley, ph 81 5479.

**GIVE AWAY** MkI bodyshell. Contact Peter Harding, ph 310 167.



The 1796 cc B-series ohv engine is generally a trouble-free unit. Tappet noise is common, but is nothing to worry about. Check the front face of the engine block for signs of coolant leakage from the cylinder gasket.

The 2227 cc E-series engine suffers from worn big-end bearings, given away as a loud thumping from the bottom of the engine on starting. The engine has to be lifted from the car to replace these - a major job since the engine/gearbox unit is very heavy. In good condition the engine should produce about 75psi from cold.

Mk 1 and 2 cars have a cable operated gearchange which works all right so long as it is correctly adjusted. 1800 Mk3 and 2200 models have a better, rod operated system. A rattling from the gearbox at idle is normal as long as it disappears when the engine is revved.

The hydraulic clutch is quite heavy to operate but should engage smoothly and without

juddering. On both models press the clutch pedal down at idle - if the engine speed drops dramatically don't buy the car unless you are willing to do heavy mechanical work. On the 1800 it means the clutch release bearing needs replacing - the parts are cheap but the engine/gearbox has to come out to renew it. On the 2200 it means that the crankshaft thrust washers are breaking up.

On models with powersteering ensure that there are no leaks and that it operates quietly. Non-PAS cars have very heavy steering when parking, but this should lighten up once on the move.

Ensure that the car sits level on the suspension - if it sags to one side or one corner, the Hydrolastic system, on that side is faulty. Though you can replace the parts yourself, a special pump is required to release the pressure in the system and to reinflate it.

The front disc/rear drum

brakes give little trouble. The 1800s and the 2200/Six have larger front brakes.

Unlike many cars of their era 1800/2200s usually go to the scrapyard because of mechanical failure rather than rust. The bodysheet has the distinction of being one of the torsionally stiffest ever made.

Starting at the front, examine the wings around the headlights, rear edge and the joint to the inner wings which are all dirt traps. Lift the bonnet and check where the inner wings join the bulkhead.

Check the door bottoms and the inner and outer sills. Lift the front carpets (they are only held by pop studs) to see if the front edge of the floor pan has rusted. At the rear, the valance below the bumper rusts out as do the lower edges of the rear wings. You can see these through the rear light access holes (hidden behind the trim panels at each side of the boot) if you want to check them out.

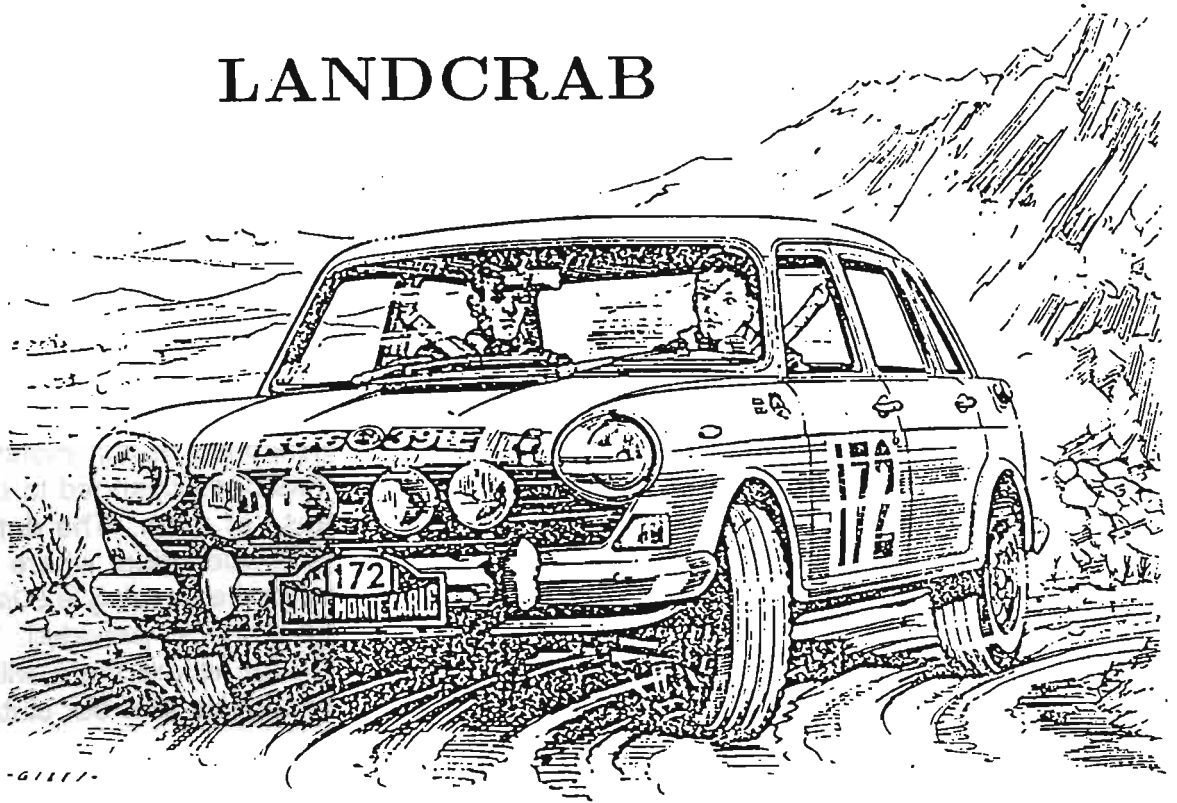
## BACKGROUND

Introduced in 1964 the BMC 1800 was a logical extension to the pioneering transverse front-wheel drive theme that had proved so successful in the Mini and 1100. Powered by a detuned MCB engine and fitted with Hydrolastic suspension, the 1800 combined a truly massive cabin area with levels of roadholding (if not performance) that many sports cars of the era were hard-pushed to match. In fact the 1800 was used as a remarkably successful rally car, coming second in the 1966 London-Sweden Marathon.

Badge engineering meant that both Austin and Morris versions were available with the much plusher but mechanically identical Wolseley 18/85 which followed in 1967. Mk2 versions of Austin and Morris models gained a redesigned nose and tail in 1968 together with more powerful engines on all versions. In 1969 the 'S' models featuring a twin-carburettor engine gave the range a performance boost: 0-60 mph acceleration in 13.7 seconds and a top speed of close on 110 mph.



# LANDCRAB



Number 14

Canberra and District Austin 1800 Club

July 1989

Nine members only attended the June meeting in which Andrew McGregor was elected President, and George Parker Treasurer, of the club pending future constitution.

Response to the membership application forms and the Club Assistance Plan sent out with the last newsletter was a little disappointing. Seven members to date have returned their forms together with fees and that figure includes two interstate members.

Feedback indicates the majority of members are not really interested in the social and formal proceedings associated with club administration. Not wishing to sound sarcastic, I guess the question has to be asked, "Do we want a properly run club?" To institute a constitution legally requires a minimum of fifteen members. Perhaps at the July meeting as many members as possible attend to make their feelings known. Should another low turnout result it will be assumed that we do NOT want an *official* club preferring instead to remain as we are — an informal gathering, meeting monthly without the red tape of club proceedings. If this is our wish, those members already having paid their fees will be reimbursed and we can revert to a donation system as before to offset the costs of producing the newsletter, which I am only too pleased to continue.

Correspondence was received from Pat Farrell of the AMVC (Vic) and included a 55-minute video on the London to Sydney Marathon in which an 1800 finished second. The video is currently doing the rounds. Pat has also compiled a list of 1800 material to be found in past issues of *Modern Motor*, *Motor Manual*, *Autocar* and *Wheels* magazines and has sent us a list to date.

Bill Fraser of the Welsh 1800 Club wrote and included their latest club magazine, somewhat expanded and published quarterly. It is interesting to note that from now on their magazine will include an Aussie segment. Bill also described their clubs' first participation in a major show event, namely the three-day Motor Show held at the National Exhibition Centre in

## THE ROTODIP PROCESS

[The following was taken from the November 1968 *Modern Motor* magazine.]

BMC uses a process called *electro-coating* to supplement their basic rotodip rust proofing treatment.

The rotodip method treats and paints complete car bodies. The electrocoating plant is used to paint small components not able to be treated on the huge rotodip machine. The combined result provides complete rust-proofing of all painted components of BMC cars. The electrocoating installation costs \$280,000 and was the first of its kind in Australia. It has been in operation since May 1966.

Electrocoating is a similar process to electroplating. Metal is plated, rather than sprayed, with paint to give uniform and complete coverage, even inside tubes and other normally inaccessible parts.

Bodies for all Australian-made BMC sedans — Mini, Morris 1100 and Austin 1800 — are all treated on the \$2 million rotodip machine during manufacture. On this exclusive machine, the unpainted bodysheet and doors are submerged and rotated in a series of baths containing phosphates and primer. This treats and covers every metal surface, both inside and out, and prevents the onset of rust.

The electrocoating plant paints small parts which cannot be treated by the rotodip process. This includes such parts as the fascia, or dashboard panel, heater boxes, grille panels and numerous small sheet metal parts not welded to the body itself.

Electrocoating is a major advance in the technology of metal coating. It involves a dip process in which paint held in suspension by a liquid is used. The paint is deposited on the metal component when an electric current passes from an electrode to the vehicle which acts as the other electrode. Paint particles are attracted to the metal, coagulate and are deposited until an even paint film covers the entire surface, including edges and remote crevices, and all internal surfaces. When the paint film reaches a certain thickness it insulates the metal and prevents more paint being deposited. When deposited, the paint is hard and cannot be removed.

Unlike spraying or conventional non-handling dipping methods, electrocoating leaves no uncoated areas in parts of complicated shapes. It also gives an even paint thickness and virtually eliminates paint losses.

The rotodip process fully immerses and rotates each sedan body in a six-stage phosphating machine, then takes it through a drying-off oven, followed by a dip tank of special rust-inhibiting priming paint, and a primer bake oven. All these processes are continuous and automatic.

To move through the machine the unpainted car body is *skewered* on a long metal spit which has a sprocket at one end. The sprocket runs on a toothed rack, so that the spit — and the body clamped to it — rotate as they move.

The first tank contains a heated alkali to remove oil and other contaminants. The second tank contains a cold water rinse, and the third a hot water rinse, to make sure the body is perfectly clean before it enters the phosphating tank.

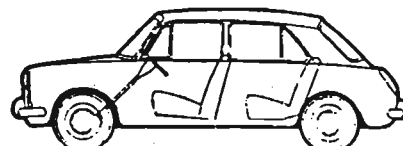
In the phosphating section the spitted body is lowered into various tanks while rotating. At the same time high-pressure jets spray the solution so that every bare metal portion of the body is treated, both inside and out. Phosphating is actually a conversion of the body steel surface so that if the paint surface is damaged accidentally during use, corrosion will not spread. It also acts as a bond between steel and paint.

The phosphating is followed by a hot water rinse and then by a heated chromic acid rinse. The body completes two slow revolutions in each tank. After phosphating, the body is dried in an oven. It is then dipped and rotated in a 7000-gallon tank of primer, remaining for 2.6 minutes. This means that every particle of bare metal receives a coating of paint. Excess paint drains away through special holes provided in body panels and other enclosed parts.

The painted body, still rotating, is baked in an oven for 30 minutes at 340°F.



# ADO 16 SPARES



Parts Available for Austin/Morris 1800/2200 and Wolseley 1885/6 (Edition 1/88)

<u>Part No</u>	<u>Description</u>	<u>ARG</u> <u>Price</u>	<u>ADO 16</u> <u>Price</u>	<u>Price to 1800/2200</u> <u>Club Members</u>
		£	£	£
CZD 55	Door Skin (All)	69.58	35.00	25.00
CZD 660	Rear Wing (A/M Mk2)	103.50	50.00	35.00
CZD 613	Rear lower panel (All)	35.65	25.00	15.00
BHM 1184	Piston Ring Set	15.76	10.00	7.50
CZD 982	'A' Post (All)	10.00	10.00	7.50
CZD 983	'A' Post (All)	NLS	10.00	10.00
CZD 1006	Front Wing (Early Mk2A/M)	86.83	50.00	40.00
CZD 1314	'B' Post (All Mk2)	29.33	25.00	20.00
CZD 1315	'B' Post (All) Mk2	193.20	75.00	50.00
CZD 1779	Regulator	6.33	4.00	2.50
CZD 1807	Bonnet (A/M)	65.55	40.00	30.00
CZD 1875	X Member (Front A/M)	54.05	30.00	20.00
CZD 3836	Grille (Mesh) (Wol)	31.05	25.00	20.00
ARA 1279	Grille (Case) (Wol)	NLS	20.00	20.00
11H 1872	Hub Cap/Wheel Trim (Wol 1")	7.48	5.00	5.00 )
GAC 168	Over-Rider (Wol)	NLS	5.00	5.00 )
GAC 169	Over-Rider (A/M)	NLS	5.00	5.00 ) (B)
22B 503	Gear	27.60	15.00	7.50
8G 2389	Bearing set	18.51	10.00	7.50
27H 8252	C.V.J.	55.20	35.00	25.00
CZD 2072	Body Moulding (S type)(C)	NLS	2.50	2.00
CZD 1051	Motif - Morris 1800 Mk2	NLS	2.50	2.50
CZD 3536	Badge - Austin 2200	NLS	2.50	2.50
GFE 1049	Air clearer	5.87	2.50	1.00
GEX 1297	Exhaust Front pipe	35.20	10.00	5.00

## Notes:

(A) Carriage extra in all cases.

(B) Set of 4 - special price £17.50

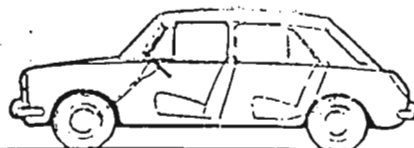
(C) Other mouldings within the set at the same price are available.

The quantity available on some items is very small and hence an early response would be desirable.

The special prices are only available to 1800/2200 Club members. Your membership number must be quoted in all correspondence, in order to secure these special prices.

(Parts Shop) 30, Main Street, Clifton-upon-Dunsmore, Warwickshire CV23 0BH  
Telephone: (0788) 815594 (Evening/Weekends)

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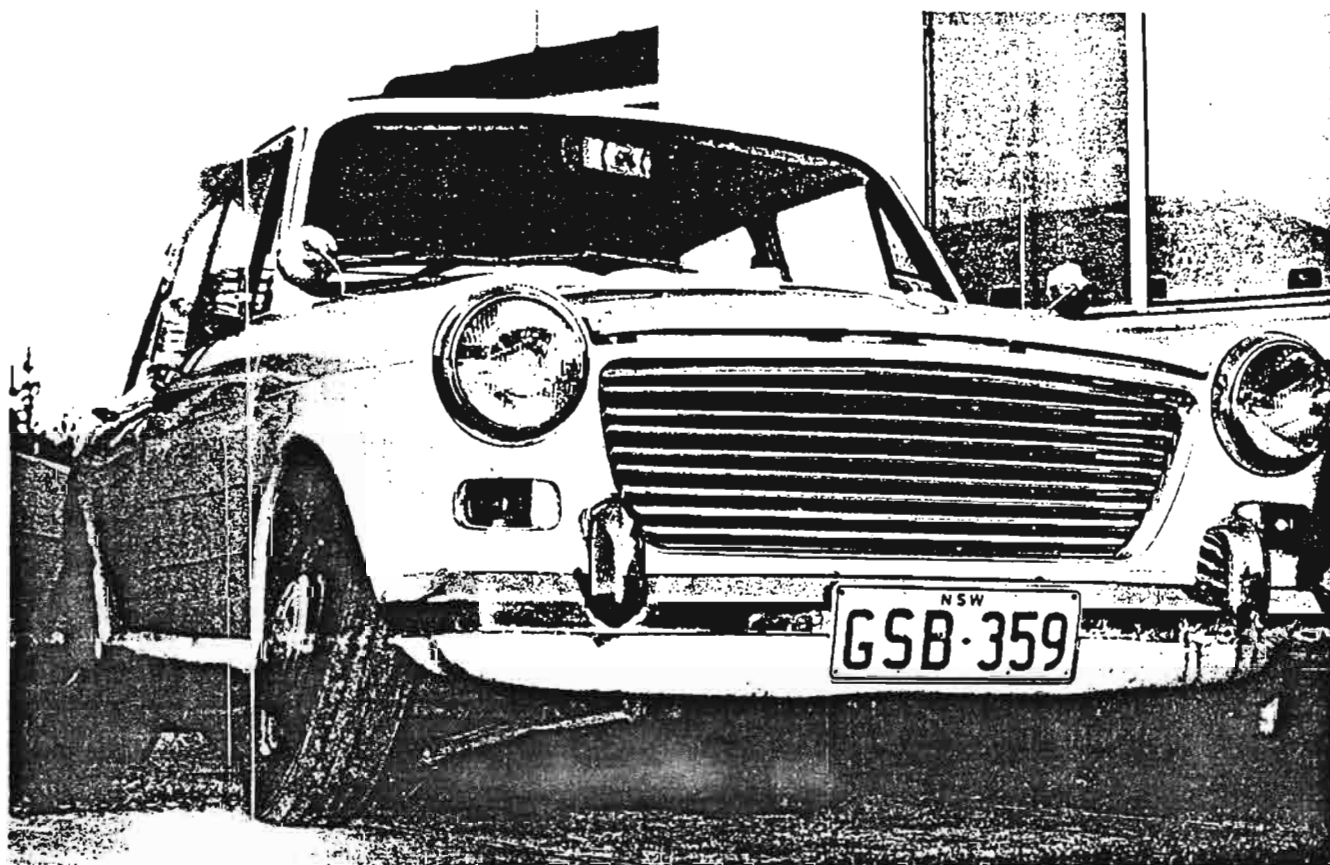
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# LEYLAND TRANSVERSE BALL JOINT FIX

If the Mini, 1100, 1300, 1500, 1800, Tasman, or Kimberley in your family grinds to a halt looking like this, then chances are that one of the swivel hub ball joints are at fault. So let's put it back together again . . .



One of the early symptoms of a loose swivel hub ball joint is a distinct clonking noise from the front suspension of the vehicle as it is driven around corners or over uneven road surfaces.

Naturally enough if a noise is not investigated and rectified when it is first noticed it is senseless to blame the manufacturer of the vehicle for the inconvenience suffered because the car is off the road for repairs when in the first instance you should have investigated the noise.

So if there is a noise in the front of your east/west better-motor-type-car then check it out. Remove the hubcaps from the front wheels and check the

tightness of the front wheel nuts and the axle nut. If they are tight then grab the top of each wheel in turn and give it a good shake — any free play in the ball joints will be evident.

Raise the front of the car and support it on stands, and while an assistant holds the foot brake firmly applied, rock the front wheels in turn to see if there is any movement in the top or bottom control arm joints.

Any movement must be eliminated by tightening the loose pivot nuts/bolts, adjusting loose ball joints or by renewing faulty bushes or joints.

To adjust a loose ball joint it is necessary to disconnect it from the mating control arm, remove the grease

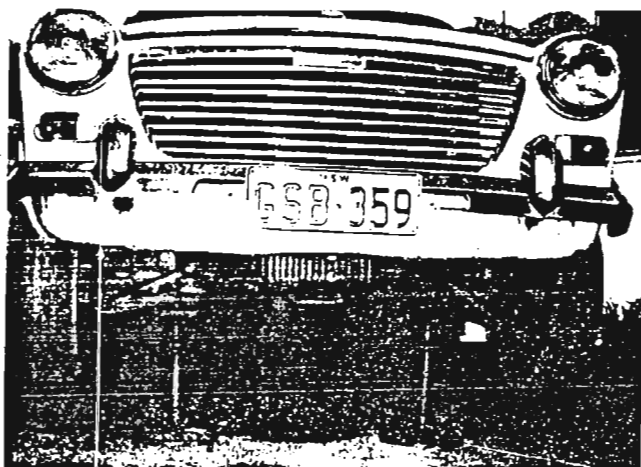
seal and the lock nut and then withdraw sufficient shims from the joint to minimise end-float when the nut is reinstalled.

If your Morris/Austin is unlucky enough to separate a ball joint from the swivel hub it is a relatively simple job to reconnect it and it is well within the scope of the home do-it-yourself enthusiast . . .

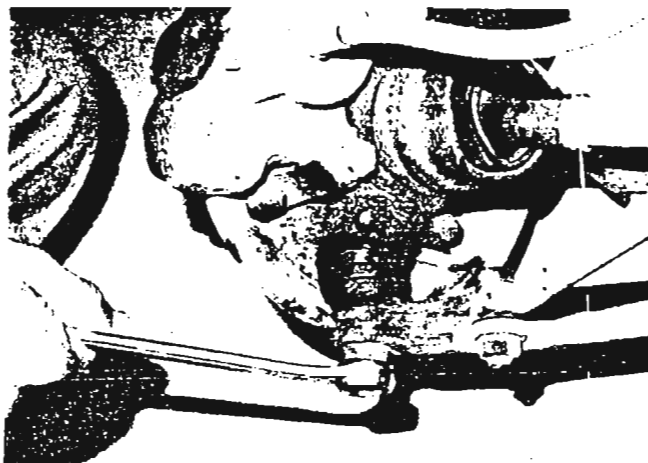
## WHAT YOU'LL NEED

Tools: A suitable jack to raise the front of the vehicle sufficiently to enable a pair of safety stands to be positioned beneath the body frame rails, a socket set, hand spanners, a hammer and a steel bar.

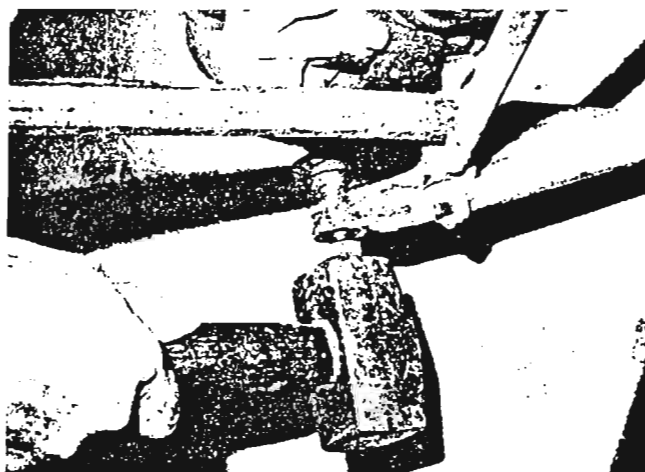
Materials: A new ball joint lock tab.



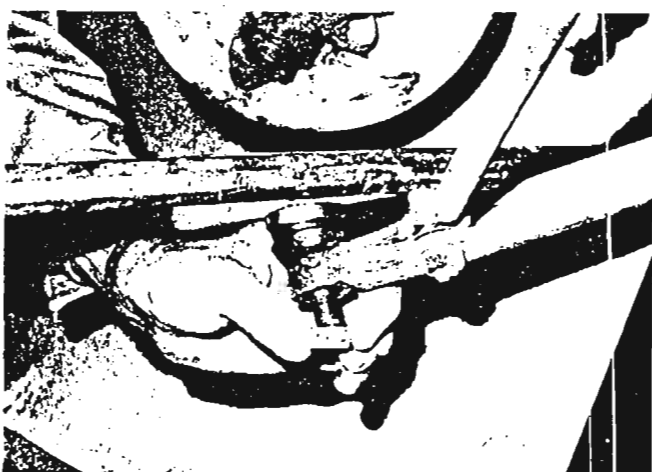
1. Remove the hub cap from the wheel that is to be fixed and loosen the wheel nuts. Carefully raise the vehicle, broken side first, and support it on stands that will provide maximum safety and sufficient working clearance.



2. Remove the wheel nuts and the road wheel. Using the correct sized spanner remove the bottom ball joint nut (or if it is the top joint that is at fault — remove the top ball joint nut) and the spring washer.



3. Clean the threads of the nut and the ball joint stud, smear them with clean oil and instal the nut until it is flush with the end of the stud. To absorb the shock hold the steel bar across arm and drive the joint from its seat.



4. Remove the nut and withdraw the joint. If the nut cannot be removed because the joint turns then place a suitable spacer into the joint lock nut and press down onto it to hold the joint lightly in the seat to enable nut removal.



5. Position the hub assembly to one side, tap the end of the stud to dislodge it from the seat in the end of the suspension arm, detach it and separate the dust cover, stud, spring and pring seat from the lock nut.



6. Withdraw the shims from the bottom of the threaded section on the swivel hub (or from the inside of the lock nut) and place them to one side for reassembly. Remove the grease nipple and detach the remains of the lock washer.



7. Inspect the thread on the end of the swivel hub for damage. If damaged it will be necessary to renew the swivel hub assembly as detailed in a workshop manual. If OK then instal a new lock washer.



8. Adhere the removed shims to the lock washer, place the spring and the spring seat up into the recess in the end of the swivel hub, and smear the mating surfaces of the stud and the lock nut with grease. Assemble the stud to the lock nut.



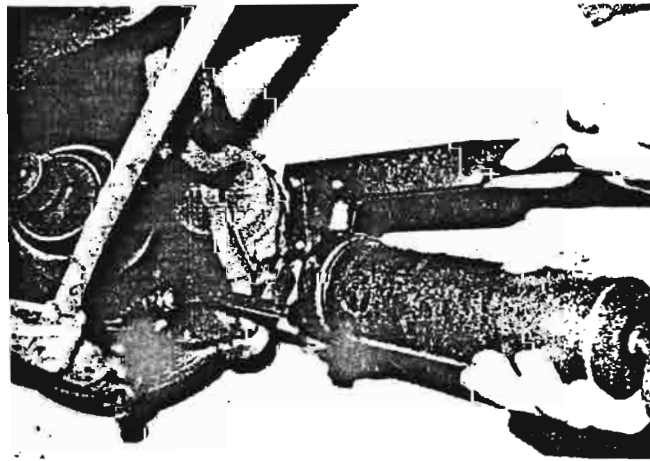
9. While holding the stud centrally in the lock nut screw the nut up onto the threaded section of the hub ensuring that the end of the stud seats on the spring seat correctly. Tighten the lock nut — bend over the lock tab.



10. With the nut tightened check the joint for free-play by rocking it back and forth. If the joint cannot be rocked it is possible that the spring seat is incorrectly positioned. Upon checking, if correctly seated, add a thin shim.



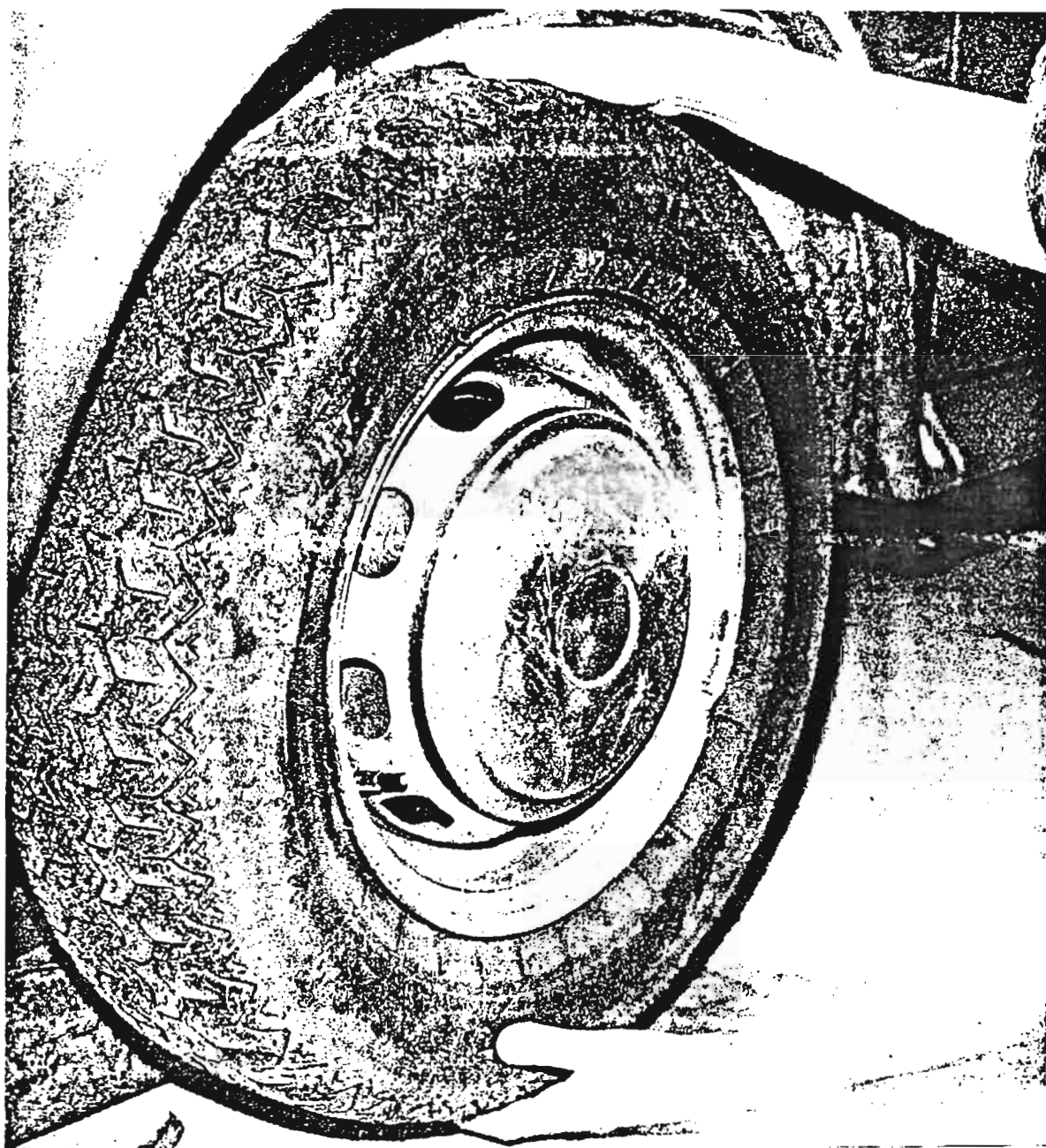
11. To remove the free-play detach a shim and recheck the joint play as in operation (10). When correct lever down on the arm and guide the end of the stud into the orifice in the arm. In the case of the top arm it will be necessary to raise it.



12. Instal the spring washer and the retaining nut. Tighten the nut using the correct socket and a bar. Grease the nipple on the ball joint and then instal the road wheel and the wheel nuts. Lower the vehicle to the ground and tighten the nuts.

If you own a Mini, 1100, 1300, 1500, Kimberly or a Tasman,  
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# **LEYLAND FWD WHEEL**





# BEARINGS

HEEL BEARING NOISES will gradually creep up on you, especially if you use the car consistently without the occasional trip in another of the same model and age. The harshness associated with a faulty bearing will not be noticed until your road drums begin to beat out a message of displeasure, or the occasional passenger peatedly asks about the rumbling noise.

When the rumbling becomes evident on a straight line then the time is nigh to locate and fix the noisy bearing.

## HECKING FOR WEAR

The noise you think might be coming from the left-hand rear wheel could, in fact, be coming from the opposite wheel or one of the front wheels. For this reason — as any decent mechanic will tell you — don't jump in and pull off a bearing and renew it unless you have proved the location of the faulty bearing.

Take the weight off the rear wheels by jacking up the car and spinning the wheels. They can be spun in turn, listening for a noise. When the wheel is gripped top and bottom and rocked there should be no movement in the wheel. If there is, then either the hub nut is loose or the bearing is worn. In the case of a Leyland or Daimler front wheel, as the diff is connected to the inner end of the driveshaft, little is achieved by rotating the wheel but if a rocking movement is felt, the wheel should be removed for further investigation.

## WB BEARINGS

There is a special puller available for removal of the wheel hub and disc assemblies but with care the wheel hub can be removed using a hammer, as illustrated. When reassembling the wheel the split tapered collar should be renewed if wear is apparent on the outer face of the collar.

## UM BRAKE MODELS

On drum brake models there is no

caliper to be removed. Instead, the hub is removed as described, or by using two directly opposed large screwdrivers or flat-ended levers, prise the hub from the drive shaft. The backing plate bolts are then removed and the backing plate suspended in the same manner as the caliper on disc brake models.

## PACKING WHEEL BEARINGS

Place about three egg cups of wheel bearing grease — high melting point WB grease for disc brake models — onto the palm of your *clean* hand and press the bearing down into the grease. Repeat the process until the grease is forced out the top side of the bearing. Gradually rotate the bearing on your hand until grease has been forced out all the way around the bearing. Wipe off traces of excess grease and install the bearing to the hub by exerting pressure on the outer track of the bearing — not the inner track.

## GREASE SEALS

New grease seals must always be used; before installing the seal in either side of the swivel hub, the seal lip must be smeared with grease. The seals are installed in the same way as the bearings and the lips of the seals must face each other on installation. The seating area of the inner seal on the drive shaft must be clean and any burrs removed using fine wet and dry paper and then all traces of filings or swarf removed.

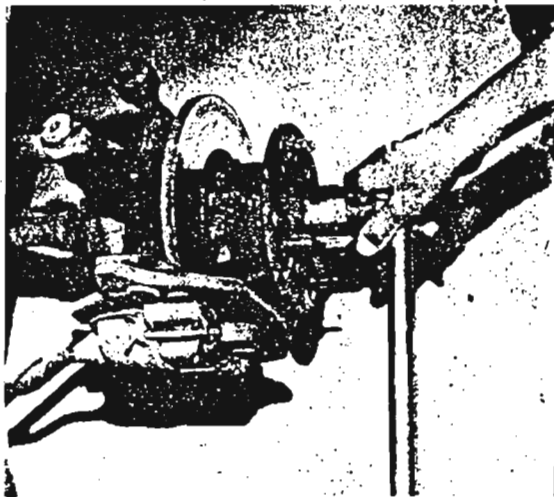
## HUB NUT

It is not uncommon for the hub nut to need to be tightened again after the car has run for 200-300 kilometres but if the nut needs to be continually tightened then inspect the tapered collar closely. If after renewing the collar the trouble persists, remove the wheel hub and rotate it 90 degrees. Note that if the car has been continually used with a loose hub nut, it might be necessary to renew both the driveshaft and the wheel hub to eliminate the problem.



1. Raise and support the front of the car on stands positioned beneath the front subframe. Remove the road wheel and rock the hub back and forth to ensure that the movement felt is in the hub bearings.

2. Remove the split pin retaining the hub nut to the driveshaft, and while a helper depresses the brake pedal loosen the hub nut. If the nut can't be loosened because the brake disc slips through the pads it will be necessary to install the wheel and lower the car.

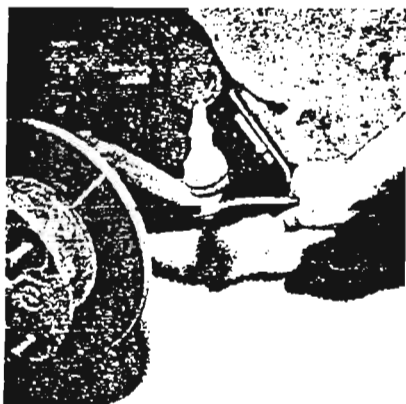


## WHAT YOU'LL NEED:

Materials: New bearings, new seals (not sold in bearing set), split pin, grease, cloth and cleaning fluid, wire hook.

Tools: Jack, stands, hammers, screwdrivers, large long solid lever, pliers, 1/2 x 9/16 in. AF ring spanner, 9/16 AF socket, 5/8 x 11/16 in. AF ring spanner, 3/4 in. AF combination spanner, half in. drive socket bar and a 1/2 inch and 5/16th" socket and bar from a 3/4 in. drive socket set. Also the car's wheel brace.

# LEYLAND FWD WHEEL BEARINGS



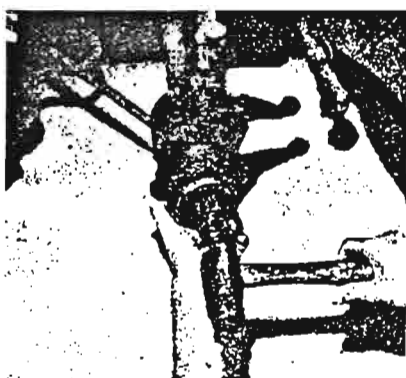
3. With the brakes applied and top gear selected the hub nut may now be loosened. Again raise and support the car. Loosen the steering arm to tie-rod joint nut and hit the end of the arm with a hammer to break the joint taper. Remove the nut and detach the arm.



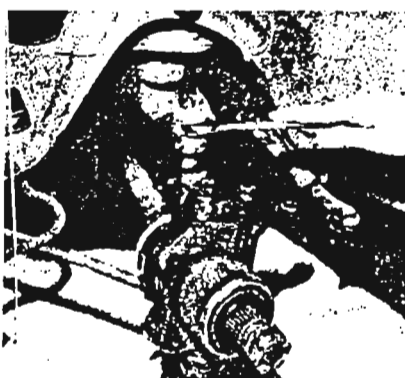
4. Slowly push the rear of the disc assembly inwards and remove the two bolts which retain the brake caliper to the steering knuckle assembly. If the disc is scored or the pads are worn down to the metal then the brakes should be looked at.



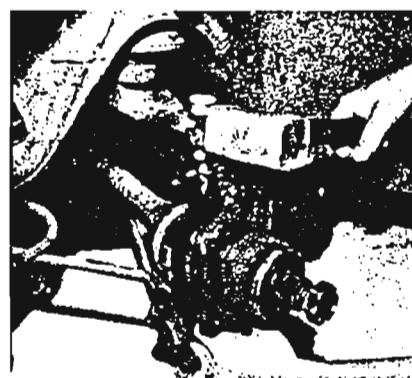
5. Withdraw the caliper assembly from the disc and suspend it on a length of wire. If the caliper piston shows any signs of leakage the piston seals must be renewed — always overhaul both sides of the car at the same time and never re-use brake fluid.



6. Press down on the lower arm to allow disconnection of the ball joint. Install the hub nut until the outer face of the nut is aligned with the end of the drive shaft. Tap the end of the shaft with a soft face hammer as shown.



10. After breaking the position of the swivel hub on the drive shaft, straighten the tab of the lock plate beneath the top rebound nut. As shown above, remove the rebound nut and then lift off the nut and the washer. Install the nut about three full turns.

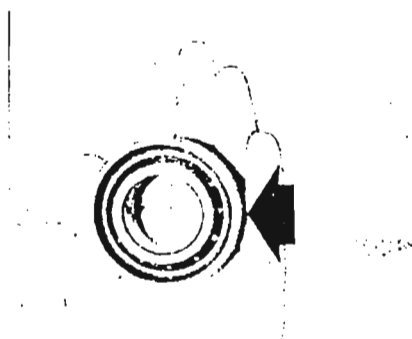


11. Carefully strike the end of the upper control arm in line with its centre line while pulling the swivel hub downwards. An alternate method is to hold a hammer against one side of the joint and strike the other side with a second hammer.



15. On new bearings where the inner race is separate from the outer track ensure that the thickest part of the bearing track is installed towards the outer bearing track on assembly. Use high melting point wheel bearing grease on disc brake models.

16. The bearings must be packed with grease until grease is forced out the other side (arrowed). This type of bearing is also installed with the thickest side of the outer track towards the opposite bearing — see the introductory section of the story for bearing packing procedure.

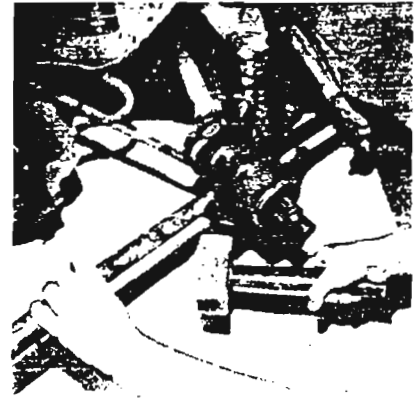




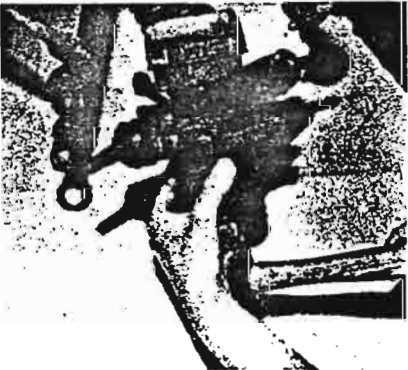
6. Remove the hub nut and tap the side of the hub to dislodge the tapered collar. Now working alternately on opposite sides of the hub gently tap the hub with a soft-faced hammer to remove the hub from the drive shaft. Place the hub and disc to one side.



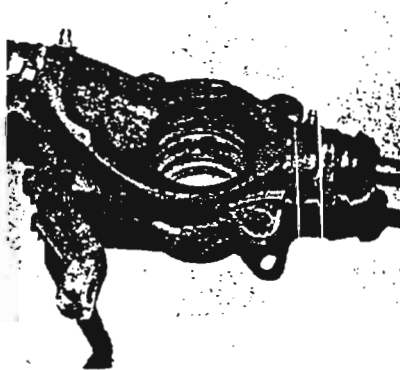
7. Hold the head of the bolt which retains the tie-bar to the lower arm and remove the nut and washer from the bolt. Withdraw the bolt and lever back on the lower arm to detach the tie-bar from the flange on the arm. If the tie-bar is bent it must be straightened.



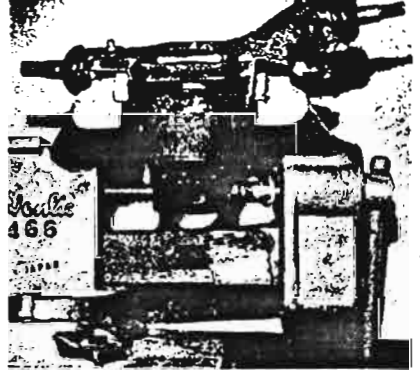
8. Remove the nut and the washer from the lower balljoint of the swivel hub. Insert a lever in over the lower arm to rest beneath the body. Press down on the lever and tap the end of the lower arm with a hammer to release the ball joint taper from the arm.



Upon breaking the joint taper remove the nut and separate the joint from the upper arm. Tap the end of the drive shaft while gently pulling the swivel hub towards the hammer. When free, remove the hub nut and lift off the swivel hub assembly.



13. The illustration shows the bearings removed from the hub. The purpose of this is to show the groove between the two bearing seats in the swivel hub. To locate this groove insert a punch into the hub and dislodge the bearing spacer to feel for the groove.

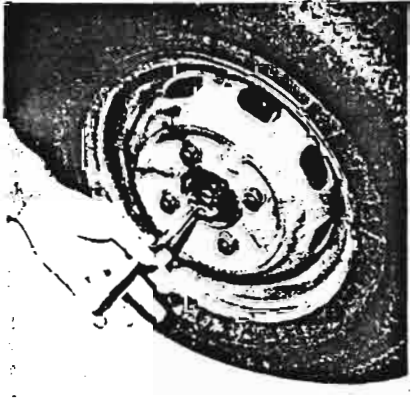


14. Having located the groove, support the swivel hub assembly and drive out the outer bearing and the seal. Invert the assembly and drive out the inner bearing and the inner seal. Wash the swivel hub assembly without getting grit into the ball joints.



17. Use a tubular drift slightly smaller in external diameter than the external diameter of the outer track of the bearing when installing the bearings to the hub. Install the seals with the lips towards each other. True-up the nut contact area of the arms.

18. Prior to sliding the swivel hub onto the drive shaft clean the shaft flange which the seal abuts. Lower the vehicle to the ground and tighten the hub nut to 105 Nm (80 lb/ft). Install a new split pin tightening the nut slightly if necessary to align the pin hole.





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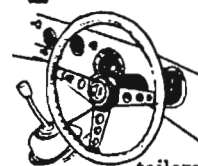
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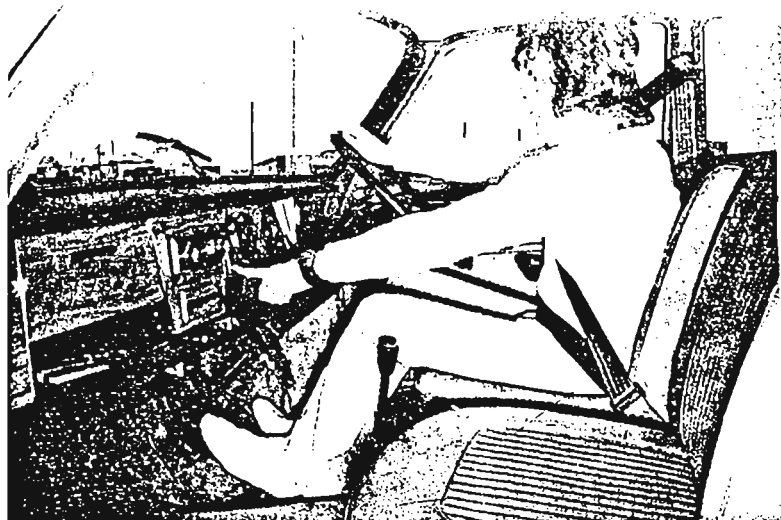
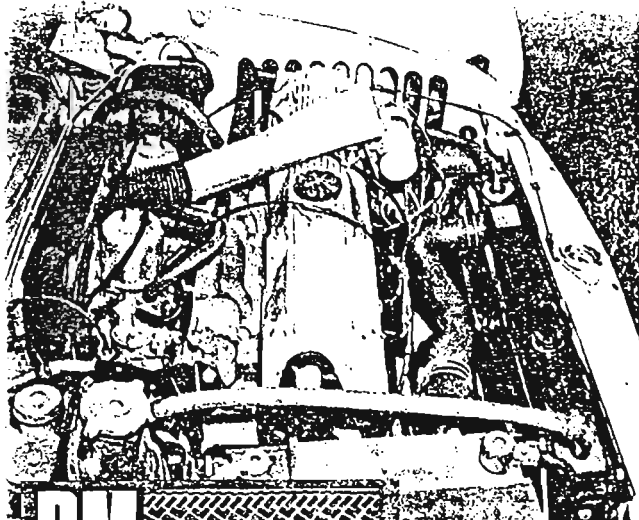
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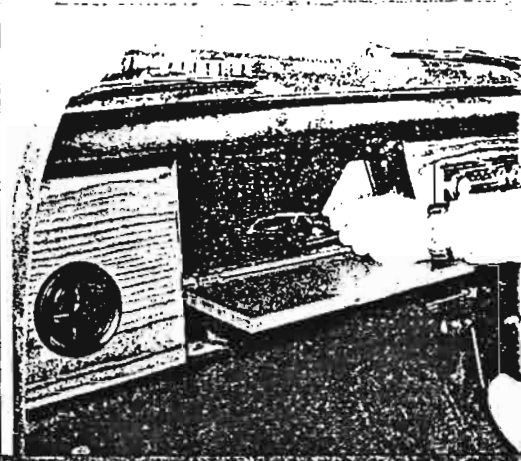


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...the 1800S which is a...  
...the 1800S which is a...  
...the 1800S which is a...  
...the 1800S which is a...

**I** You won't notice any difference in the styling of the good old Land Crab until you get close enough to see the front and rear badges which announce that the car is a Morris or Austin 2200. Or is the Wolseley Six, the luxury version, all that different in appearance from the 18/85. But when you drive the car you find the experience a world apart from driving the 1800S which the 2200 replaces.

The new engine — new over here, that is, it has been around in Australia in a different body for a couple of years — is beautifully smooth, quiet, and torquey. It will pull in top from as low as 10 mph without fuss, rocket from rest to 100 mph in under 11 seconds, and has a true top speed on the test car of 107 mph.

All the figures we got for acceleration and speed were a lot better than those claimed, and fuel consumption was a good deal poorer. This is likely to be due to the fact that the test car had been over 11,000 miles and was clearly loosened up.

### Interior

You have the same amount of room inside as with the 1800. The armchair luxury of a room in the back and on the whole the trim is neat and well finished, but the fascia is covered in horrid imitation wood which looks like cheap wallpaper.

The test car was fitted with inertia reel seat belts which was as well since the wiper, washer, lighting, and heater switches would have been reachable with static belts. The arrangement of the switches

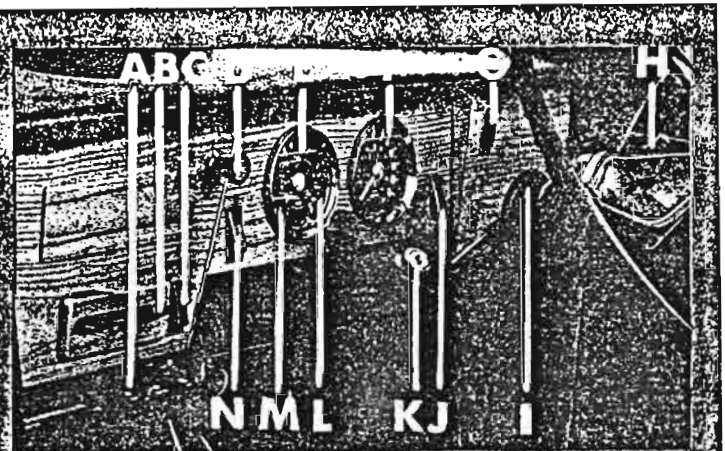
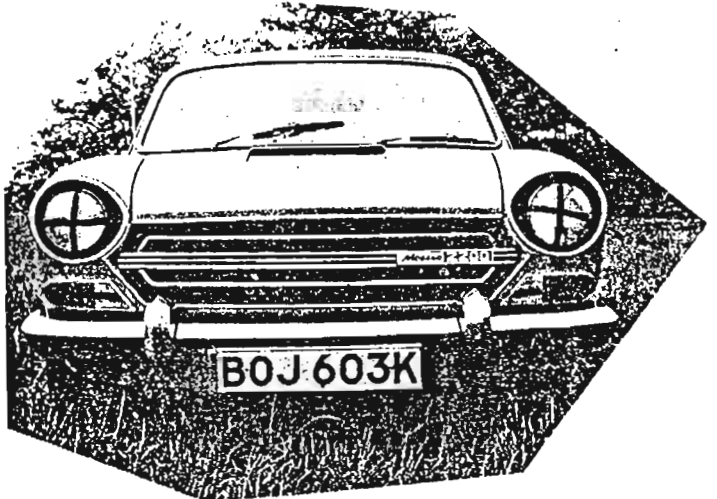
seems a little hap-hazard and the wiper and washer switches are not one above or beside the other, as you would expect, but the washer control is diagonally offset to the right.

All round visibility is quite good, but there is the familiar difficulty of not being able to see the boot lid when reversing. This is not quite so important with the 2200 as there is less overhang than with other makes of similar capacity for luggage.

The instruments are grouped behind the steering wheel where they are easy to read. The right-hand dial carries the speedometer which has a trip odometer, the left-hand one holds water temperature and oil pressure gauges, and the fuel gauge.

The test car was a poor cold starter and needed several twists of the key but as soon as it had reached running temperature starting was immediate.

All the pedals tended to be



### DASHBOARD KEY

- |                    |                                |
|--------------------|--------------------------------|
| A. Heater controls | H. Horn/dip/flasher/indicators |
| B. Ashtray         | J. Fresh air vent              |
| C. Heater blower   | K. Wipers switch               |
| D. Choke           | L. Ignition/column lock        |
| E. Fuel gauge      | M. Oil pressure gauge          |
| F. Speedometer     | N. Temperature gauge           |
| G. Washers switch  | O. Lighting switch             |

*the smoothness of  
six cylinders gives  
the 2200 power,  
speed and flexibility*

## SPECIFICATIONS

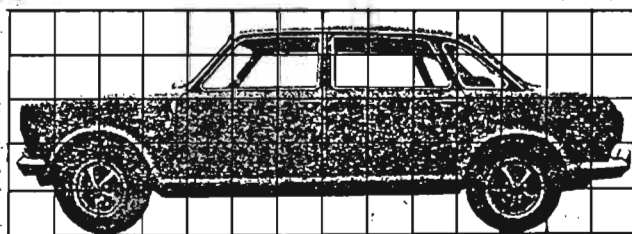
**ENGINE.** OHC water-cooled 6-cyl. transverse 2227 cc develops 110 bhp at 5250 rpm. Compression ratio 9:1. Carburetors: twin SU HS6. Oil capacity 17 pints including filter; transmission integral with engine.

**TRANSMISSION.** Clutch: 8½ in. diaphragm hydraulically operated. Gearbox: 4-speed all synchromesh, rod operated remote control floor mounted lever. Final drive 3.88:1 via open drive shafts to front wheels.

**SUSPENSION.** Independent both front and rear with Hydrolastic displacers linked fore and aft. Wishbones in front and trailing arms at the rear. Brakes: 9.7 in. discs at front, 9 in. drums at the rear servo assisted; total swept area 294 sq. in. Steering rack and pinion.

**GENERAL DETAILS.** Battery: 12v. 55 amp/hr. charged by alternator. Tyres 165 SR x 14 on 4½J rims. Wheelbase 8 ft. 10 in. Track 4 ft. 8 in. front, 4 ft. 7½ in. rear. Overall length 13 ft. 10½ in. Overall width 5 ft. 7 in. Overall height 4 ft. 8 in. Ground clearance 6½ in. Kerb weight 23.3 cwt. Fuel: SU electrical pump from 12½ gallon tank at rear.

**PRICE.** £1,128 plus PT £236.56. Total £1,364.56.



**VISI-SCALE.** Each square represents one square foot.

heavy in action although they all worked smoothly enough and there were no complaints about leg fatigue.

With a 0-60 mph time of 10.7 seconds, there is little trouble in leaving the pack standing at the traffic lights if you want to show off or get away from some worrying character! And you can change straight from first to fourth when you reach your legal 30 mph with minimal bother.

The gear change was unremarkable but on the test car it was impossible to select reverse without gauching the cogs unless you put it into another gear first.

### Handling

Rapid cornering provokes very little body roll thanks to the Hydrolastic suspension, and apart from the expected mild degree of understeer, when the front runs wide, the car can be pushed round bends with confidence. Even on wet roads adhesion remains good.

The steering is heavy at low speed in spite of a bigish wheel and parking calls for strong arm stuff, but this situation improves as speed increases. Straight line fast driving feels absolutely safe and stable even in strong cross winds.

The 2200 is one of the quietest cars we have tested until the road speed is well above the legal limit when it is still better than most. There is some wind noise at speed, and tyre roar on certain surfaces but both are acceptable.

The most disappointing feature of the test car was the fuel consumption which was down to 19.5 mpg for the overall test figure, and only 30.4 mpg for feather-foot economy driving.

Perhaps there is a case to be made out for a fifth gear a la Maxi, which, due to the excellent flexibility of the engine, would be a real working gear under all conditions.

For everyday mixed conditions use, driven with reasonable decorum, you would probably see 22-23 mpg.

The Hydrolastic suspension on the test car seemed to give a tauter ride than we remembered finding on the 1800S, and this made the car a little bouncy over rough surfaces but on average roads the ride was firm and comfortable.

Although passengers are pampered by the seating, the driver has more difficulty in finding a really comfortable position. This is partly due to the flat bus-like rake of the steering wheel and

## PERFORMANCE

**TEST CONDITIONS** — Dry, overcast, no wind.

**TEMPERATURE** — 16 deg. C (60 deg. F) **FUEL** — 4 star.

### ACCELERATION TIMES

0-30 mph	3.7 sec.
0-40 "	5.5 "
0-50 "	7.7 "
0-60 "	10.7 "
20-40 " (in top)	8.4 "
20-40 " (in third)	5.8 "
30-50 " (in top)	8.5 "
30-50 " (in third)	5.9 "
40-60 " (in top)	9.8 "
40-60 " (in third)	6.1 "

**STANDING ¼-MILE** — 17.4 secs. **MAXIMUM TRUE SPEED** 107 mph.

### SPEEDOMETER ERROR

Speedometer reading	20	30	40	50	60	70	80	90
True speeds	21	31	40	50	60	69	78	87

### FUEL CONSUMPTION

Town driving	21.0 mpg
Country driving	23.7 "
Main road (up to 70 mph)	20.7 "
Economy driving	30.4 "
Overall trip (16 miles mixed conditions)	24.2 "
Overall 700 mile test	19.5 "

### BRAKING (averaged distances) Stop from:

30 mph	39 ft.
40 "	65 ft.
50 "	95 ft.
60 "	140 ft.

**TURNING CIRCLE**—37 ft.

**POWER/WEIGHT RATIO** 94.4 bhp/ton.

partly the rather long seat squab. Test drivers varied in opinion of the degree of discomfort, and one reported none at all. It has to be the vagaries of the human shape!

### Individual opinions

"The addition of the 2200 six to the 1800 body certainly gives it a shot in the arm. The silence and tractability of the engine is superb. I could pull away from rest in third, and floor the accelerator at 10 mph in top.

The dashboard warrants criticism — I didn't like the fake wood cladding consisting of sheet metal with a printed wood-grain finish. I would have preferred a deeper dash with more padding.

It handles like a giant Mini with the added pleasure of having tauter Hydrolastic suspension which cuts down the characteristic wallowing.

I don't think many people will buy it for its looks, but apart from that it has a lot to offer in smooth, spacious motoring at a keen price." *Martyn Williams.*

"As far as engine work and maintenance is concerned, the extra two cylinders plus the front mounted radiator and electric fan seem unlikely to cause difficulties. Access is quite good for a transverse engined car; the

bonnet opens high to reveal the battery, oil filler, coil, distributor, and twin SU carbs, all very much to hand, but the brake and clutch reservoirs are tucked behind the radiator header tank, and the alternator is almost impossible to reach behind the engine and under the servo unit.

So there are difficulties with the 2200 for the amateur but nothing which should put you off buying one." *Chris Drake.*

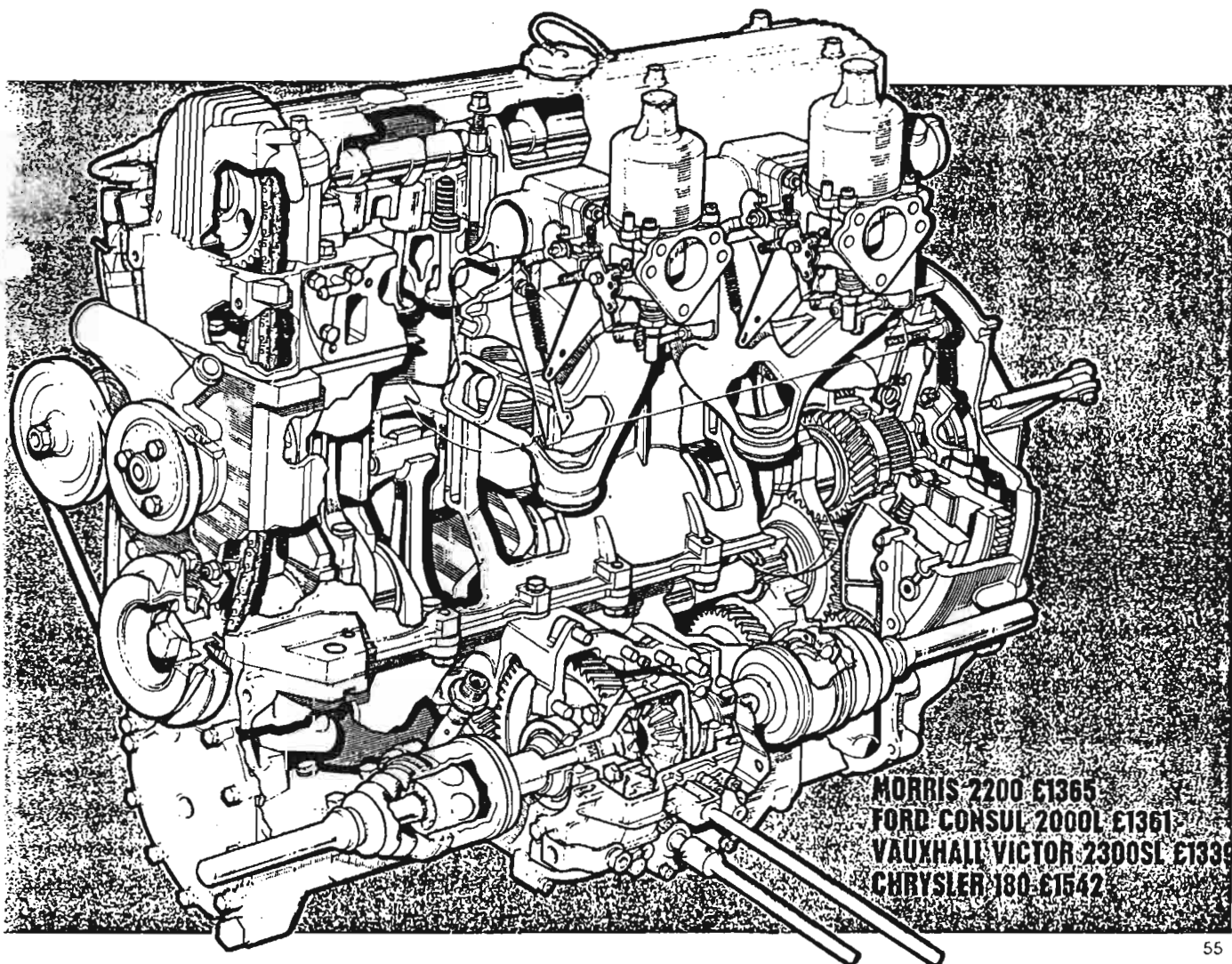
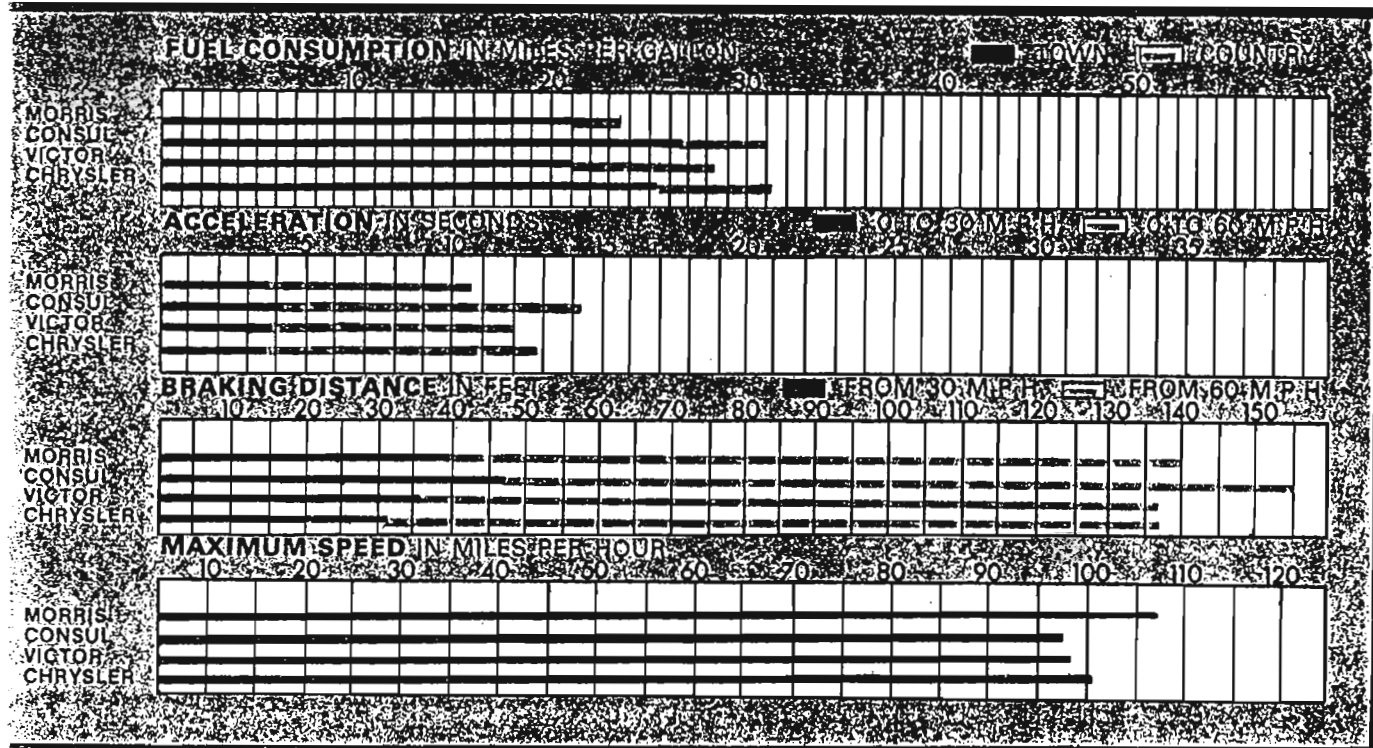
"I like the 2200 for its quiet, effortless agility and excellent handling qualities. I also like the exceptional roominess. I was not so happy about the seats in front which give little lateral support so the passenger rolls about on corners, as does the driver to a certain extent. Also the vinyl covering makes you very sticky in warm weather; it would be better to have the brushed nylon seat facings as in the Wolseley Six, but this is not offered as an option.

The asking price is very modest and I wouldn't mind owning one myself." *Doug Mitchell.*

In its range the Austin/Morris 2200 is one of the roomiest cars on the market. Add to that a quiet, smooth, and willing engine, plus excellent handling qualities, and you have a formidable challenger for the value-for money prize.

**"The 2200 is one of the quietest cars we have tested..."**

# POPULAR MOTORING COMPARISON CHART





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## WOLSELEY 6

**RA**

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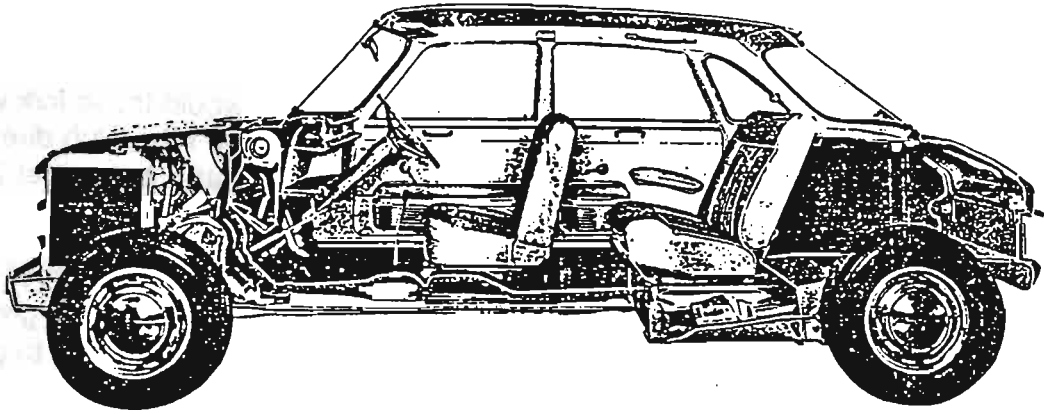
The new Austin 1800, 2200 and Wolseley Six on display at

**DARTMOUTH**  
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# LANDCRAB



Number 15

Canberra and District Austin 1800 Club

August 1989

The usual attendance of members at the July meeting together with feedback resolved the question of incorporation of the club; approximately 70% of our membership prefer to stay informal. As a consequence our membership fee can be reduced to \$10 for all members, which will cover the annual costs of mailing, newsletter production, correspondence with other clubs and phone calls.

We were especially pleased to see Ian Davey who managed to make it all the way from Goulburn. Apologies were received from Bob Hull and Tom Bray.

Our technical topic this month features starter motor problems and will be welcomed in particular by two of our members who are currently experiencing starting trouble — Kathleen Phillips in Canberra and Craig Street in Townsville. The article is very comprehensive and should pinpoint the cause as to why a faulty starter motor will not turn the engine.

Included with this issue is a list to date of articles on the Landcrab to be found in *Modern Motor*, *Australian Motor Manual*, *Australian Motor Sport* and *Wheels* magazines. Research is still continuing with other motor magazines and especially the English ones — *Practical Motorist* and *Autocar*. These magazines can be viewed free of charge at the National Library in Canberra.

Also included is yet another UK price list. I have written to this shop in the UK to enquire whether these prices would apply to our club and, more importantly, if they are willing to dispatch parts to Australia.

Not too long ago I bought a stereo radio/tape player for my car. Roomy though the 1800 is I nevertheless found it a problem to conveniently mount the speakers. Difficulty was experienced fitting them to either end of the parcel shelf and this would take up too much space anyway. Placing them on the ledge just forward of the front door can result in damage from your feet, not to mention the diminished sound quality. Mounting them into the doors is possible but entails cutting holes in the metal panel and door trim, both undesirable. Browsing over the problem for several weeks I eventually came up with a very simple and effective console mounted on the roof. How so you ask?

An overhead audio console is very easy to make and requires absolutely no drilling of holes. When made up it simply clips into place either side, in the gap between the trim; and the front 'tongue' can be slipped directly into the gap immediately above the rear view mirror. The mirror and sun visor are unaffected and are left in place. It is virtually impossible to hit your head on it although a strip of fairly thick rubber (available from Clark Rubber) glued to the front edge is recommended. The result is superb audio with the speakers directly above your head, equaling armchair listening in your lounge room. An added advantage, in addition to the ease

and cheapness to make, is that your sound system is hidden from view and thereby out of sight to would-be thieves. The cost of materials worked out to around \$8 and a plan is included with this newsletter.

Regarding the social evening with the Mini Club on 26 August, would those folk who wish to go along please advise me on 82.5262 or ring Laurie Gardner of the Mini Club direct on 91.8022, by 16 August at the very latest. I have since been informed that a babysitter is available on the evening.

Spotted by Kathleen Phillips at *Capital Auto Wreckers* in Fyshwick was a set of bone-coloured front and rear seats in excellent condition; they only need cleaning. Also the green carpet was in good condition as was the interior trim, also bone-coloured. You will have to phone them for a price.

Our current financial standing is \$184.80, however, with regard to our present club status, this will revert to \$69.80 following reimbursement to members already having paid in full. Would all members who have not yet paid their fees please do so before the end of the month?

Our next meeting is on **Monday, 7 August, at the Canberra Yacht Club at 7.30 pm.** Remember ...

You're travelling First Class.

*Mick*

## **FORTHCOMING EVENTS**

There is to be a French Day held on the lawns of the Old Parliament House on 16 July, part of the French Bicentennial celebrations.

The MG Car Club advises that a swap meet is to be held in Goulburn on the weekend of 22/23 July. Further details are to be had by phoning Don Brown on 49 6846.

Social evening with the Mini Club and ourselves on Saturday, 26 August, at the Hungarian-Australian Club, Kootara Street, Narrabundah.

The Porsche Club of Canberra has offered to organise the Economy Run on 10 September and more details will be known at the next meeting of the ACT Council of Car Clubs.

The Volvo Car Club will be organising the Breakfast Run this year on 15 October. This event normally commences at 8 am and consists of approximately a half-hour run, with the host club organising a barbecue afterwards.

The All-British Day is to be held on 5 November.

## **FOR SALE**

**Tandem-axle car trailer.** 11'x6', homemade and 85% complete (mainly welding work left to do). Suspension hydrostatic using two Morris 1500 rear subframes. Brakes connected to two wheels and over-run coupling supplied together with six spare wheels. Trailer large enough to accommodate a 4WD l.w.b. Landrover. Priced in region of \$300. This is a bargain. Further details may be obtained by phoning Leo on 411.967.

**MkII 1800.** Manual, white with black trim. Good Features: Rear tyres, CV joints, motor, 2-yr-old new clutch kit, heavy duty battery, brake pads, muffler system. Other Features: Front seats fair condition, bodywork reasonable. Not registered. \$200.

Contact Kathleen Phillips (80.5803 or 80.7224) or Janine Ryan (75.2213 b.hrs).



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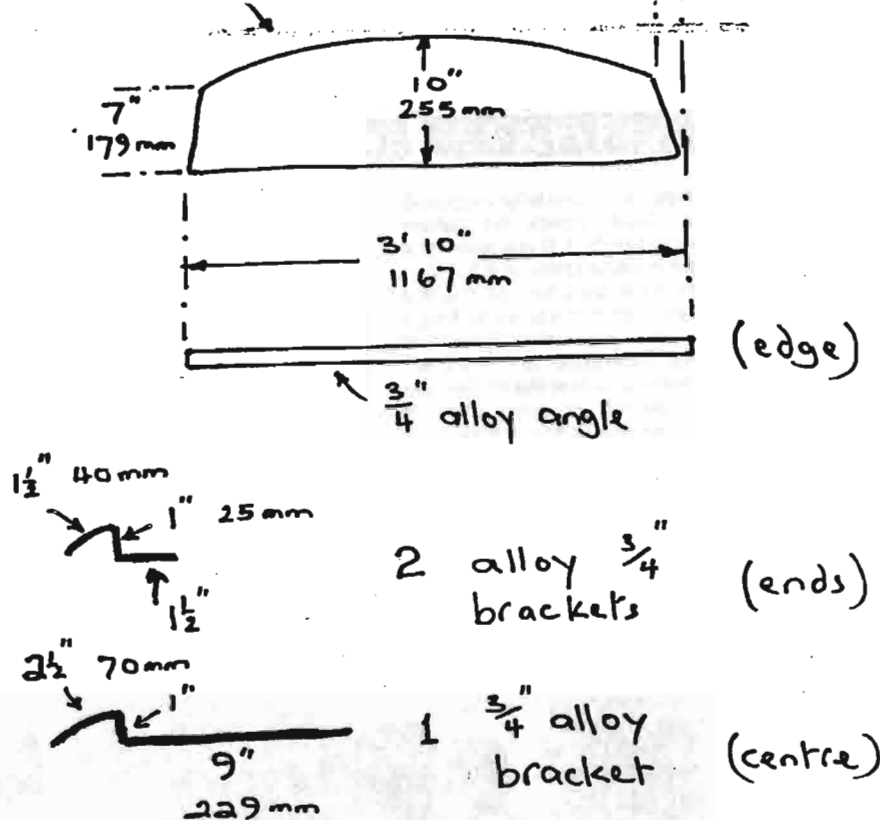
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### Material

3 ply - 3' 10" x 10" (1167 x 255)

$\frac{3}{4}$ " alloy angle - 3' 10"

$\frac{3}{4}$ " " flat - 20 1/2"

OVERHEAD AUDIO CONSOLE

# Starter motor problems

Starter problems can be frustrating — especially if they persist after you've renewed the unit. Here's how to fix them.

When the starter motor gives trouble or refuses to turn the engine, there are always some clues which indicate where the problem lies. Luckily, the starter motor circuit is fairly straightforward, and so most faults can be traced quickly.

The majority of faults are

caused by poor connections in the electrical system, but in the case of the motor itself, there may be a mechanical fault. But if the checks are approached in a logical sequence, and you have a good 'ear' for mechanical sounds, then you should quickly pinpoint the problem.

### **When to do this job**

The moment you have problems getting the engine to turn over — even if the problem is intermittent  
When the starter becomes noisy

### **What this job involves**

Checking the battery and all electrical connections in the starter circuit  
Testing the ignition switch, the starter solenoid, and the motor itself  
Removing and cleaning a Bendix drive  
Possibly fitting a new solenoid  
Possibly overhauling a starter motor

### **Other possible causes and related jobs**

Bendix starter service  
Repairing pre-engaged starters  
Please see Index for page numbers

### **To do this job**

**Tools:** Test lamp; large insulated screwdriver; spanners; hydrometer

**Materials:** Emery paper; replacement parts as required

**Time:** To check the starter system about an hour

**Degree of difficulty:** Checks straightforward

### **If you have the job professionally done . . .**

Does the starter work first time every time without any excessive noise?

## STEP 1 DIAGNOSIS: THE FAULT

nothing at all happens when you turn the key to the start position, and neither the horn or the lights work, then the battery is probably flat and should be checked.

If the battery has a charge, then check the battery leads and terminals. The leads should be tightly clamped, and the terminals and earth should be clean. It is quite possible for the lights to work yet for an apparently sound connection to fail when the starter tries to draw its heavy current.

If the battery and its connections are all sound (see Step 2), but there is still no power, when the ignition is switched on, then

suspect the ignition switch or the connections between it and the solenoid.

The starter solenoid rarely gives any trouble, and should click when you start the engine. The click indicates that power is reaching the solenoid and that it is working.

If there is no click at the solenoid, then check all connections to it and then check the solenoid itself (see Step 4). If the solenoid is not faulty, then the problem must lie in the starter motor or in the connections to it though in rare cases the fault could be in the ring gear.

Replacing the ring gear is described in another article.

**TIP**

### Quick action

If ever you hear strange noises coming from your starter motor — whether it is of the inertia type or pre-engaged — investigate as soon as you can. This is very important as prompt action could save the motor from the scrap heap. If the motor or the gear teeth wear, the flywheel ring gear will get chewed up very quickly, and to replace this you have to remove the engine or gearbox first.

## HOW IT WORKS

### The starter circuit

There are two types of starter motor, the Bendix type and the pre-engaged type. The pre-engaged type can be recognized by the fact that its solenoid — an activating switch — is situated directly on top of the motor. The solenoid for the Bendix type is located separately, usually on the bulkhead or inner wing in the engine compartment.

The Bendix type is more prone to trouble as the pinion is made to rotate and move inwards to

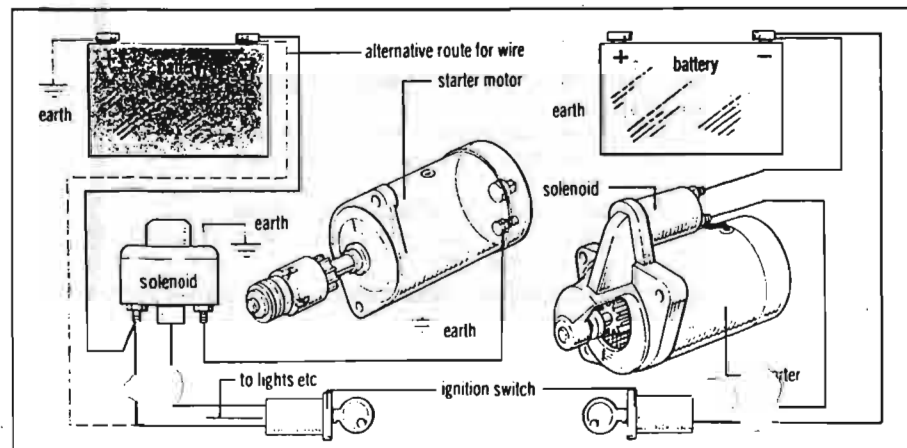
engage with the flywheel. Because of this movement, the pinion can stick on its shaft and can also suffer from problems caused by worn teeth.

The pinion on the pre-engaged type is moved outwards from the motor to engage with the flywheel by a lever connected to the solenoid.

Power to the starter motor arrives through a simple circuit. A cable goes directly from the battery to the starter solenoid. A

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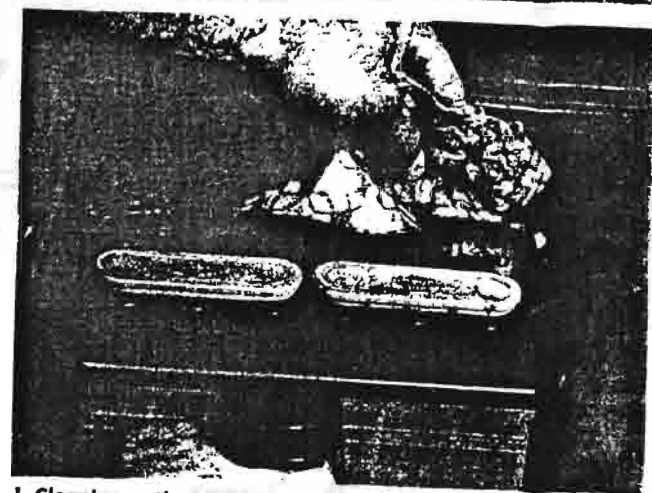
The battery, ignition switch, solenoid and starter motor are all earthed and a bad earth in the circuit is a common cause of starter motor problems.



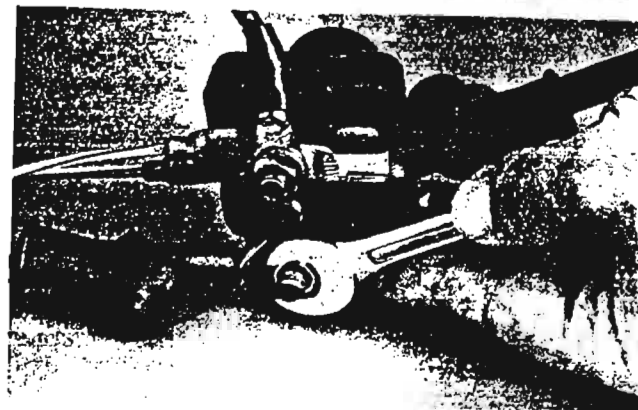
## STEP 2 CHECK BATTERY AND CONNECTIONS

If the car seems to be electrically 'dead', check the battery terminals first. If you notice that the positive terminal is hot after trying to start the car, this is a sure sign that it is not making a proper connection. Instead of just examining the terminals, clean them first (fig 1), then use a spanner or screwdriver to loosen the clamps from their posts and disconnect both leads. Clean the connecting surfaces with emery paper before reconnecting and make sure that the clamps and cable are all in good condition. (see WW 4 and 5).

Try starting the car again. If you still have no response, follow the positive cable from



1. Cleaning up the terminal clamps — inside and out



2. Checking that the battery lead is tight at the solenoid



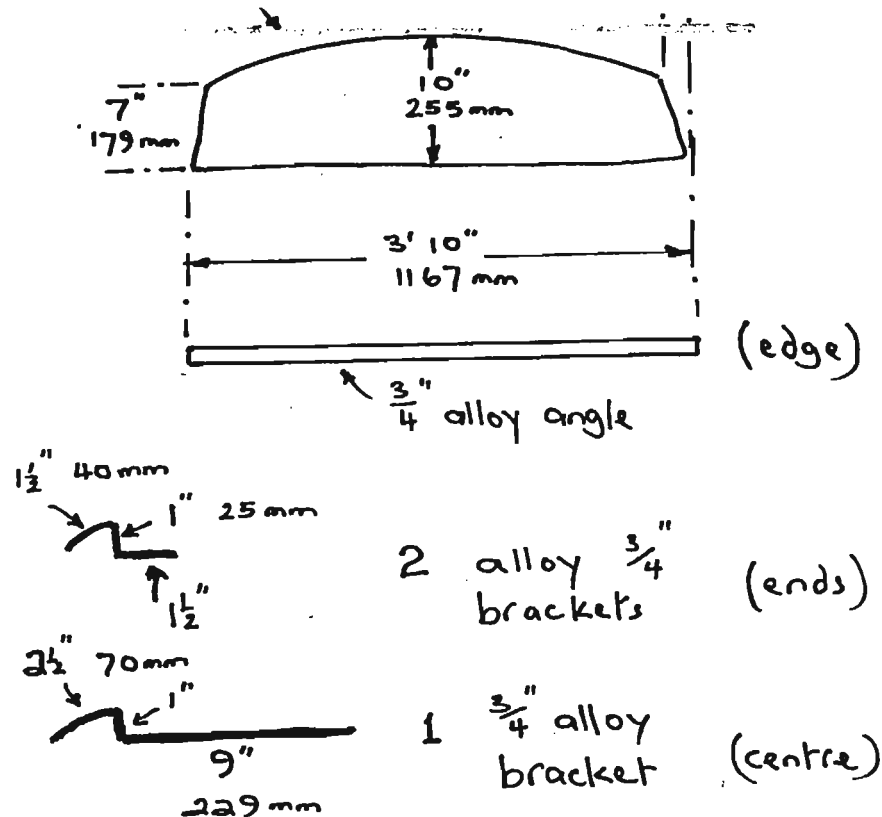
3. Checking earth lead

the starter solenoid and make sure that the nut holding it in place is tight (fig 2). Use a spanner or socket spanner to do this, but be careful not to overtighten it and be sure not to let the spanner touch any other part of the car or you may receive a nasty shock.

Next, examine the earth strap and its connection to the car's bodywork (fig 3). If there is corrosion here you should disconnect the strap and clean the area with a wire brush or sandpaper until at least some bright metal is showing. If the

you are in any doubt about the old one's condition.

If the car is still electrically dead, the battery must be tested. Assuming that you have not left the lights on and that the car has been in regular use, a flat battery means that either there is a drain on the electrical system caused by a short circuit or that the battery is faulty. Recharge it and then test each cell with a hydrometer (fig 4). If the battery will not accept a charge, not even a trickle charge overnight, then you



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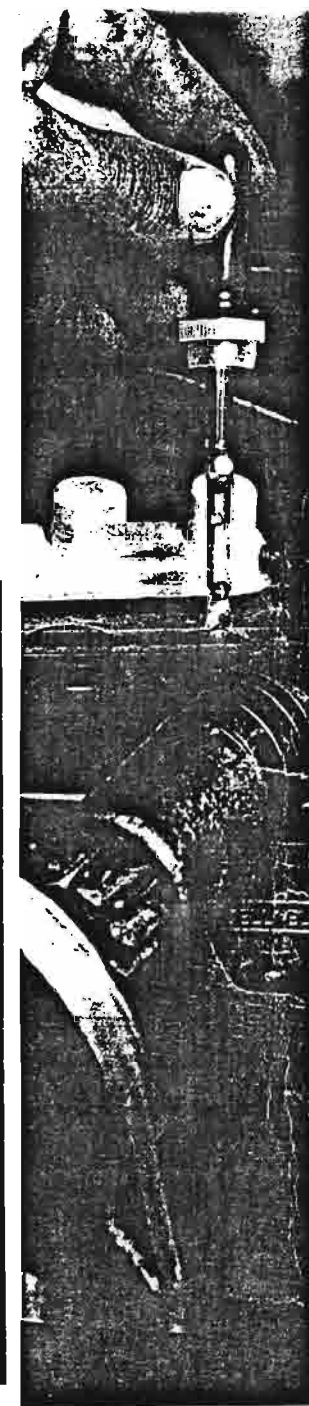
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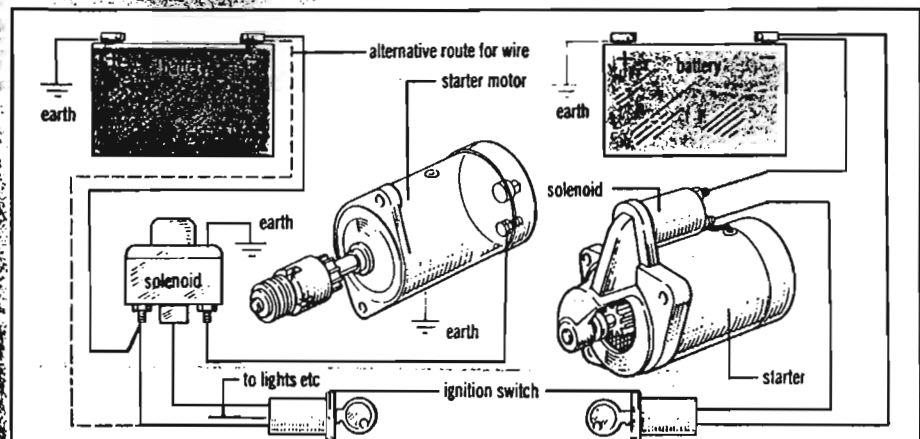
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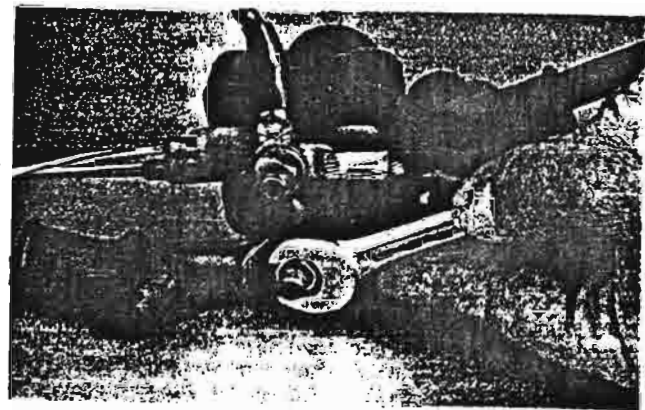


If the car seems to be electrically 'dead', check the battery terminals first. If you notice that the positive terminal is hot after trying to start the car, this is a sure sign that it is not making a proper connection. Instead of just examining the terminals, clean them first (fig 1), then use a spanner or screwdriver to loosen the clamps from their posts and disconnect both leads. Clean the connecting surfaces with emery paper before reconnecting and make sure that the clamps and cable are all in good condition, (see WW 4 and 5).

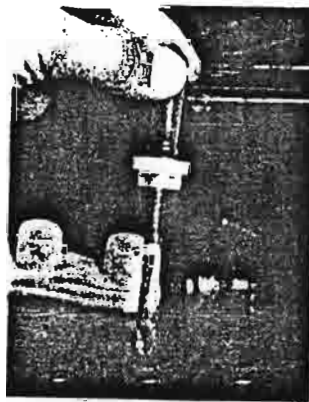
Try starting the car again. If you still have no response, follow the positive cable from



1. Cleaning up the terminal clamp



2. Checking that the battery lead is tight at the solenoid



4. Checking the battery

the starter solenoid and make sure that the nut holding it in place is tight (fig 2). Use a spanner or socket spanner to do this, but be careful not to over-tighten it and be sure not to let the spanner touch any other part of the car or you may receive a nasty shock.

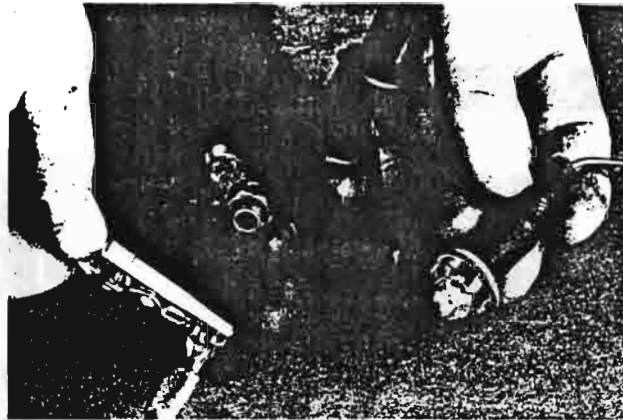
Next, examine the earth strap and its connection to the car's bodywork (fig 3). If there is corrosion here you should disconnect the strap and clean the area with a wire brush or sandpaper until at least some bright metal is showing through. Refit the earth strap but fit a new one



## CHECK POWER TO SOLENOID

If you find that the battery has power but the starter still fails to turn, try switching on the headlamps while you turn the ignition key to the 'start' position. The lights should dim — if they do not it means that the starter is not drawing any current, so part of the circuit is at fault.

To make a more detailed check you will need to use a test lamp (see WW 27). First locate the solenoid. This will be on top of the starter motor if you car has a pre-engaged starter motor or on one side of the engine compartment or on the bulkhead if you have a Bendix starter. If the solenoid is not immediately obvious, simply follow the wires running from the starter until you find it. Look for a thin wire connected to its own terminal on the solenoid. This carries the power from the ignition switch and it is usually a simple push-fit



1. Make sure that power is reaching the solenoid

on to the solenoid. Pull the wire from its terminal and, with one lead of the test lamp earthed touch the other against the lead to the ignition switch (fig 1). When the ignition key is turned

to operate the starter lamp should light up. If it does, it means that the ignition switch and the wire are working properly but that the starter or solenoid is faulty.

## STEP 2 CHECK THE STARTER SOLENOID

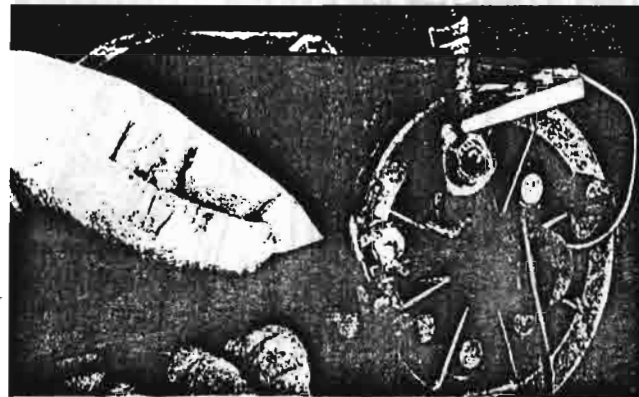
If there is power reaching the solenoid, but still nothing happens when you turn the ignition key, either the motor or solenoid must be faulty.

With Bendix starters where the solenoid is mounted separately from the starter motor, you will usually find a button which overrides the

solenoid to activate the starter; it sits between the two large electrical connections. Make sure the car is in neutral and the ignition key is 'off' and then press the button (fig 3). The starter should work, indicating that the solenoid is faulty. A starter solenoid cannot be dismantled for repair, but it is fairly

easy to fit a new replacement. With pre-engaged starters this is a little more difficult since the starter motor itself has to be removed first. Full details of how to remove this type of starter and separate the solenoid from it are covered on FTY 125 and 126.

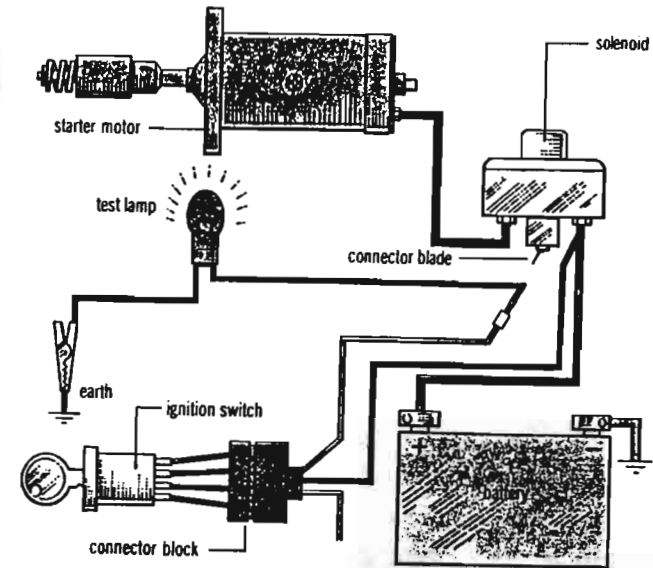
Some Bendix starter sole-



1. If the solenoid is working, power will reach the star



2. Check pre-engaged type



2. Where to check for power — both types of starter

noids do not have such a button, nor do any pre-engaged starters. To check the solenoid on these types, bridge the two large electrical connections with a test lamp. Turn the ignition key to 'start' — if the lamp lights the solenoid is working. On a pre-engaged starter, connect the test lamp

between the large terminals on the solenoid (fig 2). If the lamp lights, the solenoid is fine, and the starter motor is either jammed or has an internal fault (see Step 6). If the lamp does not light, the solenoid is faulty and you must replace it.

With Bendix starter solenoids, first disconnect the battery,

then make i of the ele Now discor undo the b hold the a engine co When you solenoid, m fit the wires round.



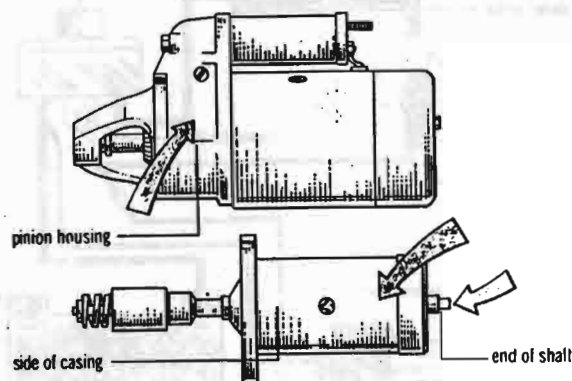
3. Override the solenoid as a final check



4. If solenoid is faulty, rene WH

er motor can electrical. ult is usually ne form of the motor ad' — that is not turn and he fault could ical or elec-

r the motor is e headlights licks and the motor fails to n the ignition r is jammed. starters. the



1. Where to hit the motor if it is jammed



square-ended shaft, turn that instead



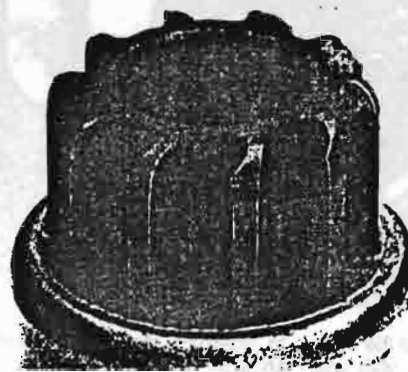
pinion can jam in mesh with the flywheel. To free it, look on the end of the starter motor where you will see a square peg. Use a spanner to turn it clockwise (fig 2) or put the car in top gear and rock it back and forth.

The same problem can occur with pre-engaged starters, but in this case, it is the operating lever linking the pinion to the solenoid which sticks. Rocking the car in gear can disengage it as can hitting the motor casing with a soft hammer (fig 1).

A motor which jams more than once is probably faulty so you should remove the motor and clean the components or replace them (see FIY 143 to 150 and FIY 123 to 134).

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4. Pinion gear in good condition

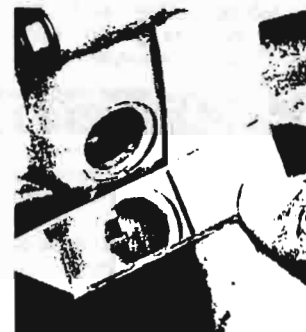


5. A chewed and badly damaged pinion

the pinion on the Bendix has stripped its teeth (fig 5). This will be indicated by a loud mechanical chattering from the motor as it occasionally engages with the flywheel. This fault occurs only on the Bendix motor as the pinion is already rotating slightly before it engages with the flywheel. Again, the motor should be removed and stripped for inspection (see FIY 145 to 146).

If it shows bad signs of wear you should also examine the condition of the flywheel ring

gear. Usually you will be able to see the teeth of the ring gear through the hole which houses the starter motor, but there may also be an access hole in the bell housing which will give you a better view (fig 6). It may be covered by a metal plate or a large rubber grommet. If the ring gear teeth are worn, the only solution is to remove the flywheel to renew the ring gear or the entire flywheel and ring gear assembly. This job is covered in another article.



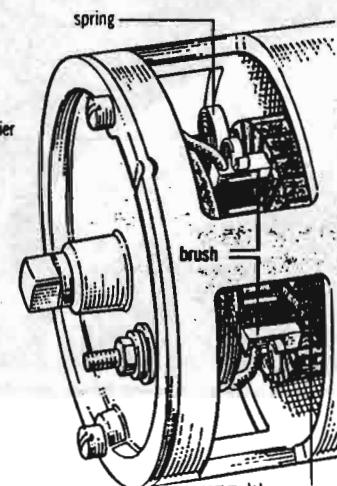
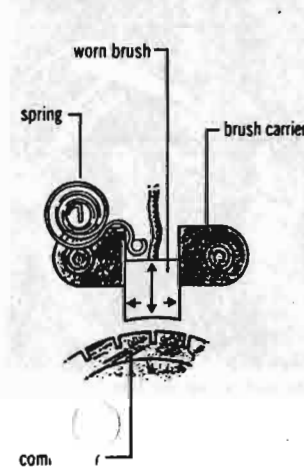
6. Checking ring gear

## STEP 6

## CHECK MOTOR ELECTRICS

An electrical fault in the starter motor can be recognised by the motor being electrically 'dead' — that is it draws no power from the battery. If the test in Step 5 has shown that the starter motor is not jammed, then the fault must be electrical. This is caused by either worn out brushes, a dirty commutator, or burnt out windings.

To investigate the problem (fig 1) you must first remove the starter and then strip it down as described in FIY 147 to 150 (Bendix type) and FIY 123 to 134 (pre-engaged type). A burnt out motor can be quickly diagnosed by the smell; as the windings short out, the protective lacquer is burnt





## STEP 3 CHECK POWER TO SOLENOID

If the battery has been recharged and the starter still fails to turn on the headlight, turn the ignition switch to the "start" position. The starter motor should turn — if they do not, the starter is not getting current, so part of the fault.

For a more detailed test, you need to use a test lamp (Fig. 27). First locate the wire which will be on top of the starter motor if your car has a Bendix starter motor or the engine compartment if you have a Bendix starter. If the starter does not immediately operate, follow the wires from the starter until you find a thin wire which has its own terminal on the ignition switch. This carries the current from the ignition switch to the starter by a simple push-fit



1. Make sure that power is reaching the solenoid

on to the solenoid. Pull the wire from its terminal and, with one lead of the test lamp earthed, touch the other against the lead to the ignition switch (Fig. 1). When the ignition key is turned

to operate the starter lamp should light up. If it does, it means that the ignition switch and the wire are working properly but that the starter or solenoid is faulty.

## STEP 4 CHECK THE STARTER SOLENOID

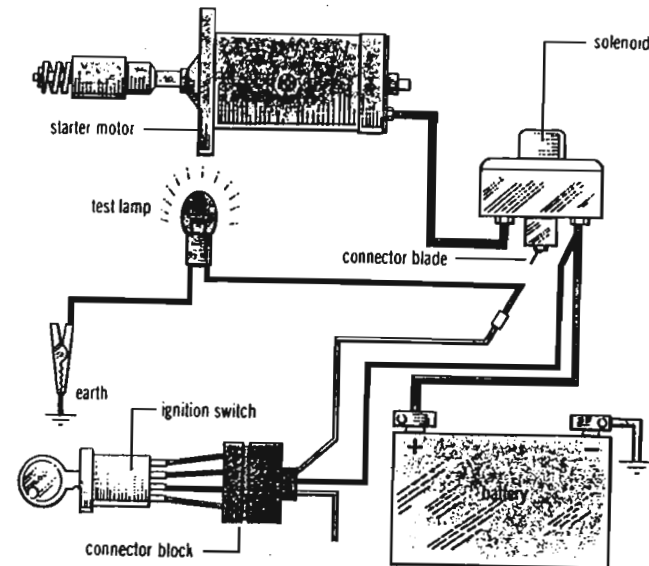
If power is reaching the solenoid but still nothing happens when you turn the key, either the motor or the solenoid may be faulty.

On Bendix starters where the solenoid is mounted on the starter motor, you will usually find a small button which overrides the

solenoid to activate the starter; it sits between the two large electrical connections. Make sure the car is in neutral and the ignition key is "off" and then press the button (Fig. 3). The starter should work, indicating that the solenoid is faulty. A starter solenoid cannot be dismantled for repair, but it is fairly

easy to fit a new replacement. With pre-engaged starters this is a little more difficult since the starter motor itself has to be removed first. Full details of how to remove this type of starter and separate the solenoid from it are covered on FTY 125 and 126.

Some Bendix starter sole-



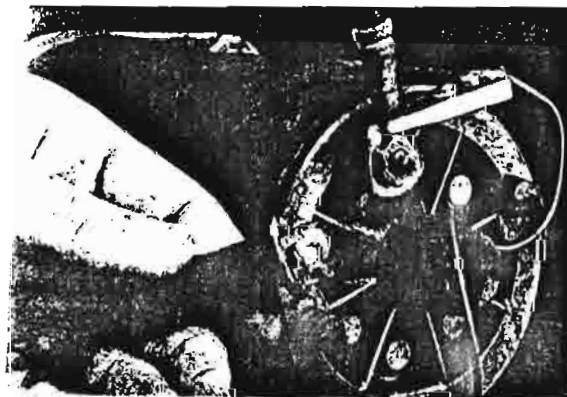
2. Where to check for power — both types of starter

noids do not have such a button, nor do any pre-engaged starters. To check the solenoid on these types, bridge the two large electrical connections with a test lamp. Turn the ignition key to "start" — if the lamp lights the solenoid is working. On a pre-engaged starter, connect the test lamp

between the large terminals on the solenoid (Fig. 2). If the lamp lights, the solenoid is fine, and the starter motor is either jammed or has an internal fault (see Step 6). If the lamp does not light, the solenoid is faulty and you must replace it.

With Bendix starter solenoids, first disconnect the battery,

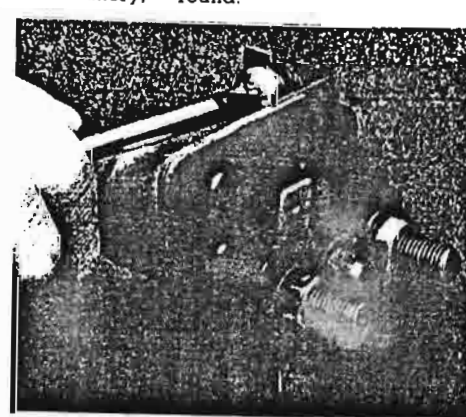
then make a note of the position of the electrical connections. Now disconnect the wires and undo the bolts or screws which hold the assembly inside the engine compartment (Fig. 4). When you are fitting the new solenoid, make certain that you fit the wires back the right way round.



2. Check pre-engaged type



3. Override the solenoid on Bendix type for final check



4. If solenoid is faulty, renew it

The system is designed to be used in a laboratory or industrial setting. It is a simple, reliable, and easy to use system. The system is designed to be used in a laboratory or industrial setting. It is a simple, reliable, and easy to use system.



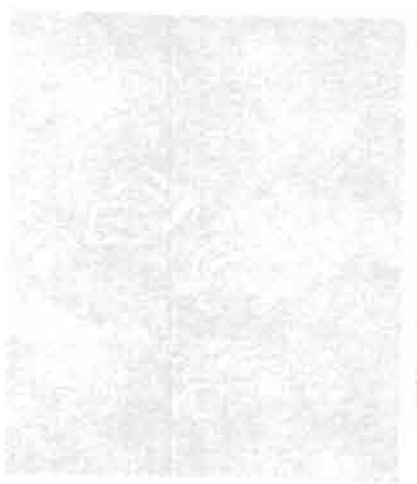
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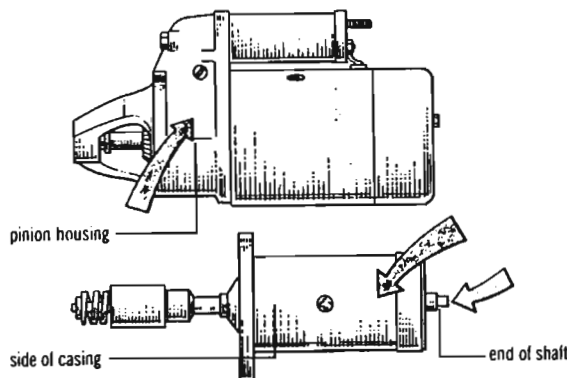
## STEP 5 CHECK MOTOR MECHANISM

A fault in the starter motor can be mechanical or electrical.

A mechanical fault is usually indicated by some form of noise, but where the motor appears to be 'dead' — that is the motor does not turn and makes no noise — the fault could be either mechanical or electrical (see Step 6).

To check whether the motor is jammed turn on the headlights — if the solenoid clicks and the lights dim but the motor fails to turn when you turn the ignition key, then the motor is jammed.

With Bendix starters, the



1. Where to hit the motor if it is jammed



2. If motor has a square-ended shaft, turn that instead



3. Hitting pre-engaged starter motor housing to free pinion

pinion can jam in mesh with the flywheel. To free it, look on the end of the starter motor where you will see a square peg. Use a spanner to turn it clockwise (fig 2) or put the car in top gear and rock it back and forth.

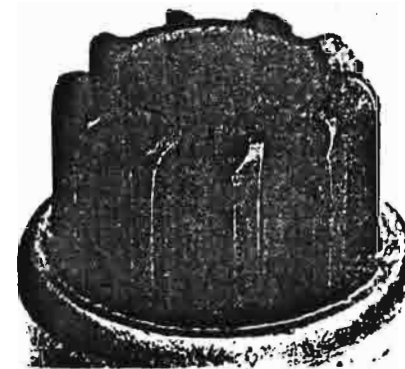
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4. Pinion gear in good condition



5. A chewed and badly damaged pinion gear

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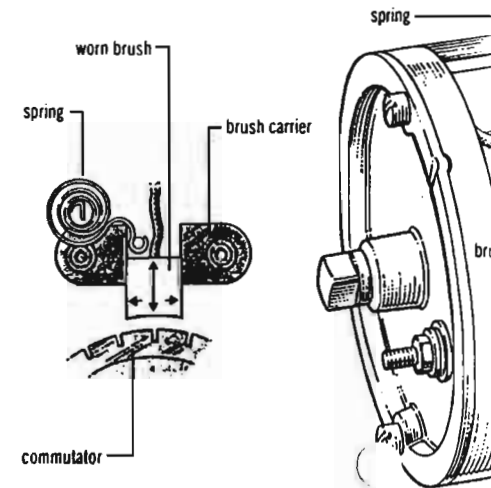


6. Checking ring gear

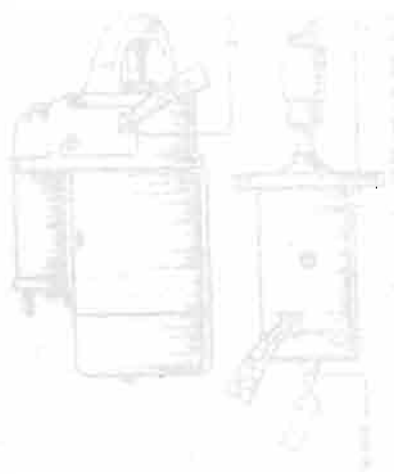
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The new construction method is a revolutionary way of building that is designed to be faster, cheaper, and more efficient than traditional methods. It uses a combination of pre-fabricated components and on-site assembly to create a strong, durable structure. This method is ideal for a wide range of applications, from residential homes to commercial buildings. The process involves several key steps, including the selection of materials, the design of the structure, and the assembly of the components. The result is a building that is not only stronger and more secure but also easier to maintain and modify over time.



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## REMOVING A STARTER MOTOR

The removal method for starter motors varies slightly from car to car and it also depends on what type of starter motor is fitted. However, in most cases, removal is straightforward, although some motors can be difficult to reach - sometimes it is easier to approach the motor from above and on other cars, it is best to tackle the job from underneath.

Start by disconnecting the live battery terminal, then remove the main feed wire from the terminal on the starter motor. On pre-engaged starters, you will have to remove the solenoid feed cable as well. Take care when removing the main terminal nut that you do not allow this terminal screw to move as this may damage the internal wiring circuits.

Next, remove the screws or nuts that hold the starter to the engine. Unfortunately on some cars you may have to remove some components that are in the way before you can do this. Finally, slide the starter motor out of its housing.

When you replace the starter motor, check all the retaining bolts for soundness - the unit takes a great deal of strain and any weakness in the bolts could cause them to snap off, creating more starting problems.



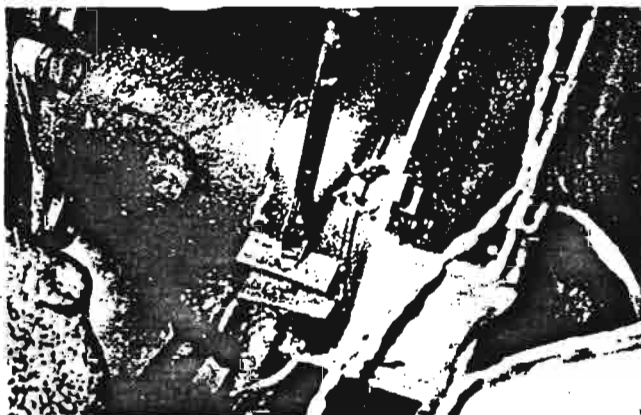
2. Undo the mounting bolts



3. Slacken the final bolt prior to removal



1. Remove the supply lead  
270 WHAT'S WRONG



4. Finally, remove the retaining bracket

# 



Figure 1. A soldier looking down at the ground.



Figure 2. A close-up of a soldier's face looking down.



Figure 3. A soldier looking down at the ground.

The first of the three photographs shows a soldier in a military uniform, possibly a soldier, looking down at something on the ground. The person is wearing a helmet and a jacket. The background is dark and indistinct.

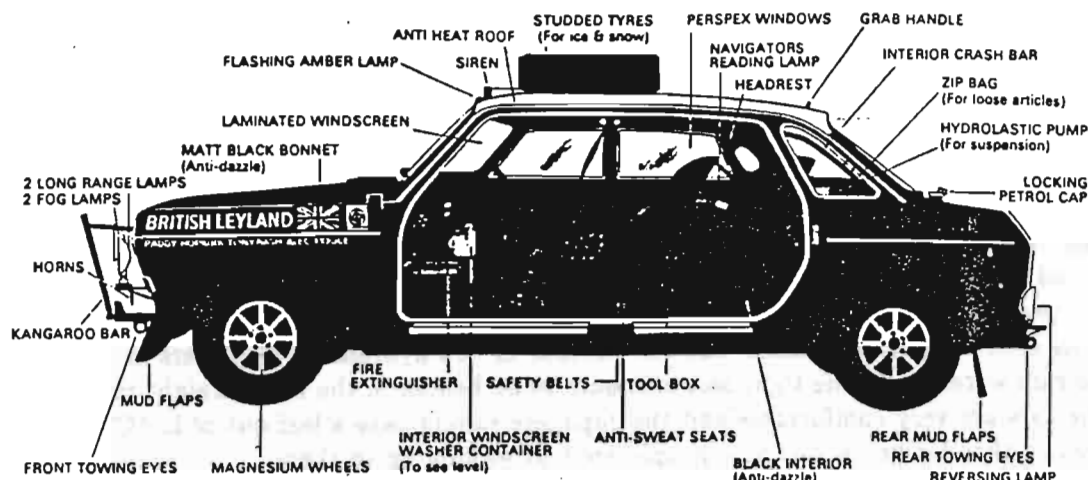
The second of the three photographs shows a close-up of a person's face, possibly a soldier, looking down. The person is wearing a helmet and a jacket. The background is dark and indistinct.

The third of the three photographs shows a person in a military uniform, possibly a soldier, looking down at something on the ground. The person is wearing a helmet and a jacket. The background is dark and indistinct.



Figure 4. A soldier looking down at the ground.

# LANDCRAB



*A British Leyland 1800 — specially built, equipped and very specially tuned.*

Number 16

Canberra and District Austin 1800 Club

September 1989

Fifteen members were at the August meeting which, looking back to recent attendances, is average and over half of the Canberra membership; this is encouraging. Three new members have joined us during the past month and they are:

Paul HANNAFORD	40 Sloane Street Goulburn NSW 2580	(048) 211-258	2 restorable 1800s 2 for wrecking
Bruce McFARLANE	'Herber', Kings Highway Braidwood NSW 2622	(048) 427-123	MkI Manual with MkII mechanicals
Jan McFARLANE	7 Haley's Close Queanbeyan NSW 2620	(062) 97-4421	MkII Manual

Ian Davey and Paul Hannaford, both from Goulburn, managed the trip to Canberra and honoured us by their attendance. Ray Woodbridge donated his \$20 refund to the club as did Colin McFarlane of Faulconbridge. Our two new members, by the way, are Colins' son and daughter. Janine Ryan (her car was advertised in last month's newsletter) also donated \$10, a token of her thanks for the subsequent sale of her car. Two more membership fees were collected and the majority of members have paid their dues, however nine fees are still outstanding and these must be received by our next meeting in order to remain on the mailing list for the newsletter and to finalise the Club Assistance Plan listing. Our current balance of funds now stands at a healthy \$175.55.

The Austin/Morris 1800/2200 Owners Club, our Welsh counterpart in the UK, recently sent a parcel containing a brand new door handle and a filter for the power steering on Bill Wheeler's English 1800. Also enclosed were some photographs of recent displays/events in which their club participated, photos of some of the members' cars and even a picture of Bill Fraser himself, their founder member. Bill also included some microfiche films of parts numbers, much to the delight of Tom Bray who is having them copied and reproduced in large size for our club's benefit. Bill also tells us that one of their members has a contract in the Ministry of Defence Shipping Department and he can get free passage of virtually anything from the UK to downunder. I wonder if Bill realises he has virtually opened *Pandora's Box* for us!

As pointed out by our UK cousins, October this year is the 25th Anniversary of the Landcrab. Please put your thinking cap on and try to come up with some suggestions how our club can contribute something toward this event.

Pat Farrell of the Austin MVC (Vic) has obtained a quote on a grill badge for us. It employs our club emblem in red and chrome on a black background with chrome writing; it's glazed and has a  $\frac{1}{4}$ " stud on the rear. The cost is \$15.60 each for a minimum order of 50. This will surely be the cheapest price we'll ever encounter.

Don't forget, our copy of the video on the London to Sydney Marathon is still doing the rounds. Recently Pat Farrell sent a rare copy of the Daily Express book on the marathon depicting the entrants, cars and the route taken. (He's in the wrong club, isn't he?) Not wishing to neglect our interstate members the invitation is extended to you if you wish to borrow the video or any other material available to us; you need only ask.

Talking of marathons, while in North Queensland recently I switched on the television one evening only to see a couple of 1800s taking part in a rally. The event, I found out later, featured the Endeavour Foundation Rally and ventured into the Gulf country. Two 1800s were entered (a MkI and a MkII), sponsored by Powers Bitter and the House of MG. Since returning to Canberra I've learnt the Landcrabs gave a good account of themselves — Car 32 (MkI) came 15th and Car 32 (MkII) came 29th out of 52 finishers. The MkI was 4th in its class. A major problem was the collapse of two hydrolastic displacers in fairly quick succession, but the cars were fast in the tight sections, only to be beaten in the long straight runs. The consensus was that the cars are very comfortable and the Japanese should take a leaf out of BMC's book. We, of course, have known that for years, but now people are just waking up to them.

Did you know that nine 1800s entered the London to Sydney Marathon and, out of 85 starters, two 1800s finished in the first five and 1800s won second and third team prizes. More 1800s finished in the first 35 places than any other car entered and the marathon covered well over 11,000 miles.

When did you last clean out your fuel system? Like most of us, you've probably never given it a thought. Here is how you can do the job very cheaply and effectively. The idea is to fill your tank with a 20% proportion of high octane unleaded fuel once in a while. The advantage is that the high octane unleaded fuel has a very high level of detergent additives included to clean fuel nozzles in the fuel injection systems of the cars which use this type of fuel. The 20% proportion is not sufficient to do any damage to valve seats (being unleaded fuel) but does wonders in removing sludge and fuel gum even after a short run. Remarkable results can be obtained using the Shell Ultra High fuel, but other brands would probably have the same effect.

Our technical topic this month is overhauling a distributor. It is probably one of the least maintained components on our engines and is taken very much for granted. Included with this newsletter is how you can check it out.

Recent correspondence included an invitation from the Apex Club of Muswellbrook to participate in the *Motorfest 89* which is to be held on the weekend of 15-16 October. Interested members can contact me on 82.5262.

Remember: Any member who wishes to contribute anything toward the newsletter is only too welcome. It can be in the way of general or technical information, about your car or even how you came to be hooked on Landcrabs. Perhaps we should nominate one member each month? What do you think?

Our next meeting is on Monday, 4 September, at the Canberra Yacht Club at 7.30 pm. Remember ...

You're travelling First Class.

Mick

## **FOR SALE**

Righthand rear suspension arm which has new pivot bush fitted. \$50. Contact Roger Payne 910.647.

MkII Manual Sedan. Light blue; motor sound. Front brakes overhauled with discs machined and new seals fitted to calipers and new pads; new brake shoes on rear. Clutch overhauled 12 months ago and car standing most of this time. Tyres good with rear two nearly new. Vehicle needs new brake master cylinder. Body condition good with no rust but minor damage to two doors. \$500 unregistered. Contact Jonathon Gifford 88.3340.

Austin 1800 MkII, 1972. Well looked after, five good tyres, runs well, very reliable, spare engine. Offers to Keith 54.6053.

Give Away: Driveshaft, suit MkII. 82.5262.





Number 17

Canberra and District Austin 1800 Club

October 1989

That dreaded Canberra 'lurgi' which has resulted in so many 'sickies' in the workforce also depleted our membership at the last meeting. Apologies were received from Mick Oates, George Parker, Andrew McGregor and Ray Woodbridge. Kathleen Phillips was there with the remaining bottom tier of the chocolates she won in the lucky door prize at the 25th Birthday Party of the BMC Mini. The door prize also included a bottle of champagne which we polished off in short order. Those of us who went along thoroughly enjoyed ourselves and the ACT Mini Club are to be congratulated for organizing such a good night.

Laurie Gardner invited us 'landcrabbers' to join in the procession the following day (seeing as we are derivatives of the Mini) and so on Sunday about 150 Minis (and derivatives) set off from the Natex Centre. In Indian file we all proceeded to the lawns of the old Parliament House where a Mini 'Show and Shine' event was held.

We welcome yet more new members to the club, all from interstate. Firstly, Graham and Margaret Ryan who live at Tumblebung in northern NSW and are friends of Noel and Doreen Makings of Wallangarra in Qld. Graham and Margaret are the proud owners of a 1969 MkII manual sedan. Our other new member is Rick Hopkins of Goulburn and he is a mate of Paul Hannaford's. Rick has yet to advise me of his address and vehicles but I believe they include a couple of sedans and a ute. Rick has many spares available for both MkI and MkII but, at the moment, he is chasing a direction indicator assembly (and who isn't) along with a MkI brake booster. He can be contacted on PH (048) 218-165. A mate of Rick's reconditions worn carbon clutch release bearings for around \$10-\$15. The new cost of this item is around \$48 so don't throw away your old ones.

Jes Kirk rang me to say he and his wife are off to Queensland to spend their retirement and reluctantly wishes to resign from the club. We wish them happy days.

To things technical ... Tom Bray brought along a speedometer head to the last meeting and, when it is removed from the glass front panel, a small number was seen adjacent to the odometer. The one Tom had was marked 1184, from a utility. Apparently other numbers, yet to be determined, relate to the manual and automatic models and these numbers are associated with the final drive gear ratios, therefore affecting the speedometer readout.

While on this topic, did you know that a 13-inch wheel revolves 874 times per mile whilst a 14-inch wheel revolves 821 times per mile, both at 30 mph.

A minor overheating problem was experienced recently by a member, partly caused by a build-up of oil and grease on the meshed section of the sumpguard. Degreasing helped solve the problem. Incidentally the meshed section of the sumpguard can be chiselled off and removed without any detrimental effect with an added advantage in that easy access is gained to the lower bolt of the starter motor.

If you did not know already, the driver's side engine mount is no longer made. Most of you have at some time or another had to replace one or both of these mounts when they have been seen to part company. Perhaps someone in the club can suggest a way to rebond them, especially with all the excellent adhesives on the market today. Addison's Garage in Kiama can still supply new ones at a cost of \$44 each.

Engine oil dipsticks! Of course you knew there were two lengths. The manual dipstick is  $17\frac{5}{8}$  inches (44.8 cm) long and the automatic is  $16\frac{1}{2}$  inches (41.9 cm) long.

# CLUB ASSISTANCE PLAN

Member's Name	Resident of	Phone Number	Camping Available	Mechanical Assistance	Distance Willing to Travel (kms)
Hamish Burnett-Read	Heathfield SA	(08) 339 3217	✓	✓	100
Ian Davey	Goulburn NSW	N/A	✓	✓	35
Paul Hannaford	Goulburn NSW	(048) 211 258	✓	✓	within reason
Jim Laity	Griffith ACT	958 900	—	✓	10
Noel and Doreen Makings	Wallangabba QLD	(076) 84 3136	✓	✓	100
Colin McFarlane	Faulconbridge NSW	(047) 512 527	—	✓	reasonable
Andrew McGregor	Pearce ACT	86 1807	✓	✓	50
George Parker	Page ACT	541 253	✓	✓	60
Kathleen Phillips	Fyshwick ACT	805 803	✓	—	100
Mick Street	Hughes ACT	82 5262	✓	✓	100
Bill Wheeler	Queanbeyan NSW	974 936	—	—	20
Warwick Wright	Curtin ACT	81 3088	occasionally	—	100

# CURRENT MEMBERSHIP (Canberra)

MICK STREET	3 Mahon Place Hughes ACT 2605	82 5262	2xMkII (manual) 1 MkI (automatic)
JIM LAITY	24 Barrallier Street Griffith ACT 2603	95 7266	2xMkII (automatic)
FRANK GIFFORD	8 Winton Place Holder ACT 2611	88 3340	MkII Ute
TOM/DOREEN MALINS	21 Lister Crescent Ainslie ACT 2602	475 805	MkII (manual) MkI (manual)
TOM BRAY	18 Baddeley Crescent Spence ACT 2615	584 825	MkII Ute
BILL WHEELER	RMB 123 Wickerslack Lane Queanbeyan NSW 2620	97 4936	MkI (manual) English model
DON THOMAS	3 Olympus Way Lyons ACT 2606	81 3046	MkII (manual)
WARWICK WRIGHT	28 Kidston Crescent Curtin ACT 2605	81 3088	MkI Ute, MkII Ute MkI Sedan MkI Sedan (w/MGB Motor)
DENNIS HARVEY	7 McCarthey Road Hall ACT 2618	302 479 (h) 61 3331 (w)	
GEOFF DOW	197 Namitjira Drive Fisher ACT 2611	88 7389	MkII Sedan
LEN EASTWOOD	34C Fraser Court Kingston ACT 2604		MkII Sedan with sunroof (manual)
MICK OATES	31 Attiwell Circuit Kambah ACT 2902	319 387	MkI Sedan (manual)
KEITH MASSEY	55 Denny Street Latham ACT 2615 Res Sch of Earth Sciences, ANU	546 053 49 2665	MkII Sedan (manual)
ANDREW McGREGOR	10 Tubb Place Pearce ACT 2607	86 1807	MkII Sedan (manual)
ROD HARVEY-HALL	65 Beasley Street Torrens ACT 2607	86 2174	MkII Sedan (manual)
KATHLEEN PHILLIPS	Box 58 Kingston ACT 2604	805 803 (w) 807 224 (h)	MkII (manual)
BOB HULL	79 Walker Street Narrabundah ACT 2604		MkI Sedan (manual)

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GEORGE PARKER	3 MacAdam Street Page ACT 2614	54 1253	MkII (manual) MkII Sedan (automatic)
RAY and JOAN WOODBIDGE	73 Morgan Crescent Curtin ACT 2605	82 3504	MkI (manual)
PETER HARDING	12 Darlot Place Kambah ACT 2902	310 167	MkI (manual)
ALAIN ROHAN	3 Echo Place Lyons ACT 2606	852 936	MkII (manual)
JAN McFARLANE	6 Hayley Close Queanbeyan NSW 2620	97 4421	MkII Sedan (manual)

. . .  
CURRENT MEMBERS (Other States)

COLIN McFARLANE	27 Bellevue Road Faulconbridge NSW 2776	(047) 512 527	MkII (manual)
BRUCE McFARLANE	'Herber' Kings Highway Braidwood NSW 2622	(048) 42 1123	MkI Sedan (manual/auto conversion)
IAN DAVEY	30 Howard Boulevard Goulburn NSW 2580		MkII (manual)
PAUL and NADINE HANNAFORD	40 Sloane Street Goulburn NSW 2580	(048) 211 258	2 Restorable 1800s 2 for wrecking
HAMISH BURNETT-READ	57 Heathfield Road Heathfield SA 5153	(08) 339 3217	Austin 1800
CRAIG STREET	3 Warrego Street Wulguru Townsville QLD 4811		MkII (manual)
NOEL and DOREEN MAKINGS	52 Merinda Street Wallangarra QLD 4383	(076) 84 3136 (message)	3 x Austin 1800s
ANDREW DOWNING	PO Box 1 Huskisson NSW 2540		MkIII (manual) English model
GRAHAM and MARGARET RYAN	Tunglebung via Bonalbo NSW 2470	(066) 655 152	MkII Sedan (manual)
RICK HOPKINS	Goulburn NSW	(048) 218 165	Sedans, Ute

OCTOBER 1989





# OTHER AUSTIN 1800 CLUBS

NAIRN HINDHAUGH	5 Rossmore Avenue Coorparoo QLD 4151		Austin Motor Vehicle Club of Queensland
PAT FARRELL	4 Wayne Avenue Boronia VIC 3155	(03) 543 3377	Austin Motor Vehicle Club of Victoria
CLUB SECRETARY	PO Box 218 Cardiff CF3 9HZ UNITED KINGDOM		Austin-Morris 1800-2200 Owners Club

OCTOBER 1989

Next time you have to buy an oil or air filter, Swiss Motors in Fyshwick stock a full range and guarantee to beat any other suppliers prices. Furthermore, club members can purchase filters at close to trade prices. The person to see is Denny — tell him you are in the Austin 1800 Club. Swiss Motors is opposite Lloyd Caravans in Newcastle Street.

Ian Davey of Goulburn recently brought to the clubs' attention an article which appeared in *Car Australia* a couple of months ago. It was called *Lemon Squash* and, if you didn't read it, it contained a description of a monster truck crushing an 1800, a P76, a Morris Marina, a Datsun 120Y and an HB Torana. Now crushing a 120Y is understandable ... but an 1800? The author of the article, David Morely, described the 1800 as a 'cane toad on wheels'. The description and the article disgusted Ian who wrote to *Car Australia*. Tom Bray, however, saw a funny side to it and his son Andrew gave the club this month's cover drawing.

On a recent trip to Melbourne, Tom and Doreen Malins came across yet another parts distributor for BMC vehicles. It is 'Dukes Service Centre' of 35 Park Road, Cheltenham VIC, telephone (03) 584-1577.

I wrote to the sponsors of the recent Endeavour Foundation Rally, the *House of MG* and *Power Brewing*, requesting more information on the outcome of the two 1800 entrants. The *House of MG* sent a photograph of the two cars with comments on the reverse stating the cars travelled more than 5000 km over Queensland's worst roads, making it home second and third. *Power Brewing* replied that, although they were a sponsor, the cars were entered by private individuals and provided the names of the entrants and the address of the Endeavour Foundation who should be able to supply what we want. They also said both 1800s won their respective divisions. I'll keep you posted.

Now that membership fees have been collected an up-to-date membership list is included with this month's issue. A listing of members wishing to participate in the club assistance plan has also been compiled and included.

A reminder that 2 September is the Labour Day holiday and our next meeting is on Monday, 9 September, at the Canberra Yacht Club at 7.30 pm. Remember ...

You're travelling First Class.

Mick



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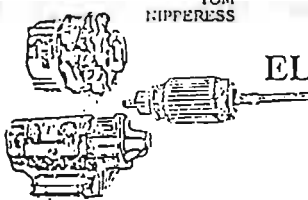
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## FOR SALE

Righthand rear suspension arm which has new pivot bush fitted. \$50. Contact Roger Payne 910.647.

Austin 1800 MkII, 1972. Well looked after, five good tyres, runs well, very reliable, spare engine. Offers to Keith 54.6053.

Austin Seven Garage Charts: \$30 each. Two only. 4 sheets of A3 (making one chart). Full maintenance program and schematic of chassis. From Miriam Brown Books, 9/57 Wollongong Street, Fyshwick. 80.7666.

Give Away: 3 Driveshafts (suit MkII) and 2 front discs. 82.5262.

Give Away: 4 or 5 1800s at Minor Industrial Area Fyshwick. Contact Len at J&L Motors on Canberra Avenue.

## FORTHCOMING EVENTS

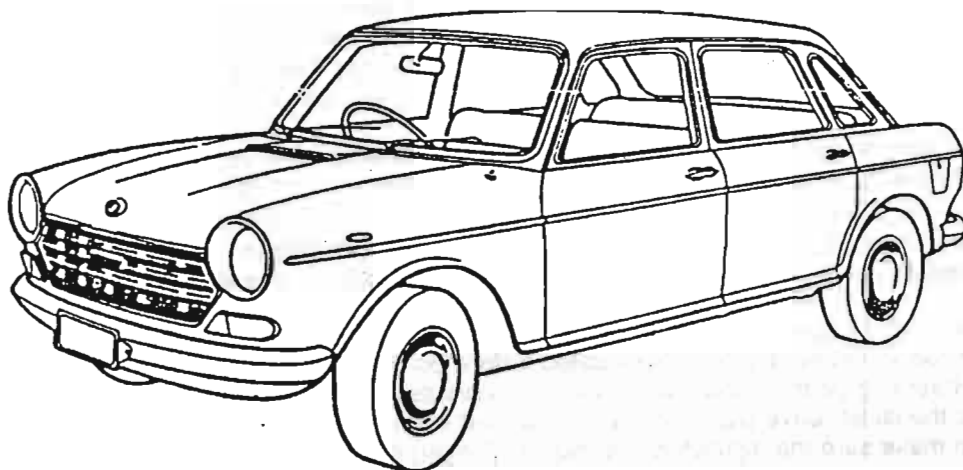
Canberra's Annual Spring Swap Meeting: 7-8 October at Canberry Village in Watson (cnr Federal Hwy and Antill St). Bikes, cars, antiques, crafts, etc all welcome. Sites \$5 (includes 2 people); Buyers \$2 (includes family). Food and drink available. Prebooking is advisable! Ring 47-0602 or 31-7557. Write to Swap Meeting, PO Box 3127, Manuka ACT 2603. Organized by VVCMCC ACT Inc.

The Volvo Car Club is organising the Breakfast Run this year on 15 October to Uriarra East. Half-hour r departing Cooleman Court, Weston, at 8 am with barbecue afterwards.

The All-British Day is on Sunday, 5 November, at Weston Park. BYO Lunch.

ACT Council of Car Clubs meeting at Capital TV, Watson, at 8 pm on 19 October.

# LANDCRAB



Number 18

Canberra and District Austin 1800 Club

November 1989

Where were you? The attendance at our last meeting saw only nine members turn up, including Paul Hannaford from Goulburn. George Parker brought in ten more copies of the 1800 Workshop Manual in the hope that more of you would take advantage of this wonderfully cheap price of \$10 per copy. Remember, they are over \$40 WHEN you can get them. George awaits your orders!

Just as we were ready to print this newsletter another membership form and fee was received. We welcome:

Leslie LENNIE	23 Garland Road	(048) 836-536	Mki Sedan
	Bundanoon NSW 2578		Mki Ute
			MkII Wolseley 18/85

Les is retired and has owned his Mki sedan from new and, to use his own words, "could be the best in Australia". Perhaps the best news though is that at last we have a Wolseley 'Landcrab' in the club. Terrific — they are so rare. Both his Mki ute and the 18/85 are currently being restored.

The ACT Council of Car Clubs affiliation fees are now due and a vote was taken and passed that we renew our membership. The fee is \$10. Our club balance now stands at \$183.39.

Now, don't forget that Sunday November 5 is the All British Day at Weston Park. Entry is free and the Jaguar Car Club, who is organising this event, welcomes as many cars as possible. Last year Bill Wheeler displayed his English Mki and Len Eastwood and I showed our MkIIs. Perhaps this year we can enlarge our display and make ourselves more known. This is an ideal opportunity. Hopefully Ray Woodbridge will display his excellent maroon Mki and perhaps we can attract a ute or two.

With regard to the Endeavour Foundation Rally where two 1800s took part, a letter was just received from Brian Weller of which a copy is reproduced and included with this newsletter for your interest.

A letter was received from Bill Fraser with the latest developments in the UK Landcrab Club. Bill has just acquired a one-owner MKIII with just 36,000 miles on the clock. Fairly rare in the UK, I would think. On a recent club outing he took it along to Abingdon where BMC used to make the MG's and viewed the original Paddy Hopkirk 1800 which competed in the London to Sydney marathon; he tells me he even managed to sit in the cockpit. Bill has advised that he can get five or six turn-indicator assemblies. They cost around \$25 each (about \$50 to us) which is a real bargain price. I have no need to tell you what they cost here. Any members wishing to buy one ... ring me ... quick!!

This month our technical topic is "conversion of your 1800 from automatic to manual". Those of you who have had an automatic in which problems occurred or anyone now experiencing problems, where perhaps there is loss of a particular gear or even a complete loss of drive, have you wished for a manual drive car? Loss of drive is most commonly attributed to a broken drive plate. This is relatively easy to replace as the motor can be removed without too much trouble. The gearbox must be supported firmly and, following removal of the engine mounts, radiator, exhaust manifold and ancillary items, the crankcase bolts and nuts can be removed together with the four bolts attaching the drive plate to the torque converter, accessible through the starter motor housing. When ready to remove the engine, first lift it about an inch at the radiator end then move engine to the right an inch or two in order to clear the torque converter boss from the crankshaft spigot.



19th September, 1989



Mr. Mick Street  
3 Mahon Place,  
Hughes,  
CANBERRA ACT 2605

GENERAL OFFICE EMBASSY HOTEL  
Elizabeth & Edward Sts, Brisbane, Qld 4000  
Phone: (07) 221 7616

Dear Mick,

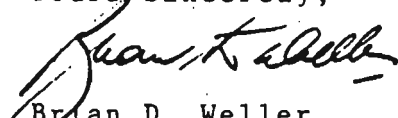
I received your letter regarding our two (2) Austin 1800 which participated in the Powers Great Endeavour Rally. The rally started at Toowoomba went to Karumba in the Gulf of Carpentaria and finished on the Gold Coast.

We built both cars indential to the ones which competed in the London to Sydney Rally, in 1968. Assistance was given to us by J.R.A., House of M.G., and the Austin Club of Queensland. In total there were 182 modifications.

Both cars performed extremely well. Being our first rally ever, we were a little sceptical regarding the endurance of the cars, so we began slowly. Half way through the rally Car 31 went for the doctor and surprised everyone, while Car 32 was used as the sweeper. On the way back from the Gulf we started to really compete and our times were up with the best in the open class. Only competing seriously in the last section, Car 31 went from no score to 4th in its class and 10th overall, while Car 32 came 10th in its class and 25th overall. We learnt alot and next year we should go close to winning the next Endeavour Rally.

If you require any further information do not hesitate to contact me.

Yours, sincerely,

  
Brian D. Weller  
Director

Please Note: we will be entering three Austin 1800 next year

EMBASSY HOTEL  
Elizabeth & Edward Sts, Brisbane, Qld 4000  
Phone: (07) 221 7616

CRITERION TAVERN  
M.L.C. Centre, Adelaide St, Brisbane, Qld 4000  
Phone: (07) 221 7411

ROSIES TAVERN  
Rowes Arcade, Edward St, Brisbane, Qld 4000  
Phone: (07) 229 4916

VILLA NOOSA HOTEL MOTEL  
Mary St, Noosaville, Qld 4566  
Phone: (071) 49 7766

CABOOLTURE HOTEL  
148-150 Morayfield Rd.,  
Morayfield, 4506  
Phone: (071) 95 2510

FRIDAYS  
Riverside Centre, 123 Eagle St, Brisbane, Qld 4000  
Phone: (07) 832 2122

IMPERIAL HOTEL  
Main St, Eumundi, Qld 4562  
Phone: (071) 42 8303

KENMORE TAVERN  
841 Moggill Rd., Kenmore, Qld 4069  
Phone: (07) 378 0777

If loss of drive is not a broken drive plate, then suspect a broken drive shaft or 'HyVo' chain, either of which involves some expensive repairs. Now is the time to consider what to do and whether it is worth converting your car to a manual. Provided the engine is in good condition the answer is 'Yes'. How do you go about it? Ideally the best way of going about it is to obtain a complete old manual power unit where the engine is worn out (preferably one you know what it is like mechanically — for example, if the gearbox was good, was the clutch okay? Are the gearchange cables working okay? Are they frayed or leaking oil, etc?).

The next thing to do is clean up the old power unit (invariably covered in thick grease), then pull the whole thing apart. Before substituting the (automatic) engine, the bronze bush located in the end of the crankshaft must be removed and replaced with a bronze clutch shaft bush, which is larger. Removal of this bush can prove difficult but a good tip is to fill the hole where the bush is fitted with grease, insert a loose fitting metal dowel into the bush, then hit it with a hammer. Invariably the bush will pop out due to a hydraulic-like action.

When reassembling everything, a few points to look for: (1) Ensure that the four laygear thrust springs and gear selector rod lockplate are correctly located before bolting the adaptor plate to the engine/gearbox. (2) Check the flywheel ring gear. If badly worn it can be reversed. (3) It is wise to renew the clutch release bearing and perhaps the clutch drive plate if more than a third worn. (4) Replace the clutch shaft oil seal. (5) Finally, don't forget to make sure the dipstick is the manual (longer) one.

If you are unable to obtain an old power unit, a list is compiled below of all the components needed to make the conversion:

- Gearbox complete with gearchange cables and control box (gearlever housing) and cable-change housing
- Change auto (blank) cover plate for the manual cover plate (hole for gearlever).
- Substitute (auto) brake and accelerator pedals for the (manual) clutch, brake and accelerator pedals.
- Clutch master and slave cylinders c/w hydraulic line.
- Adaptor plate (bolts to end of engine/gearbox).
- Flywheel, clutch pressure and drive plates.
- Flywheel housing c/w clutch fork and release bearing.
- Idler and primary gears, clutch shaft and primary gear cover.
- Bronze bush for the crankshaft.
- Manual (longer) dipstick.
- Manual engine tie rod (longer than the automatic).

Rick Hoskins has advised that he knows where to get rebuilt steering racks. The cost is \$70 and your old rack will be required in exchange. Further details can be obtained from Rick on telephone (048) 218-165.

Our next meeting will be on Monday, 6 November, at the Canberra Yacht Club. See you there.

Remember ... You're travelling First Class.

*Mick*

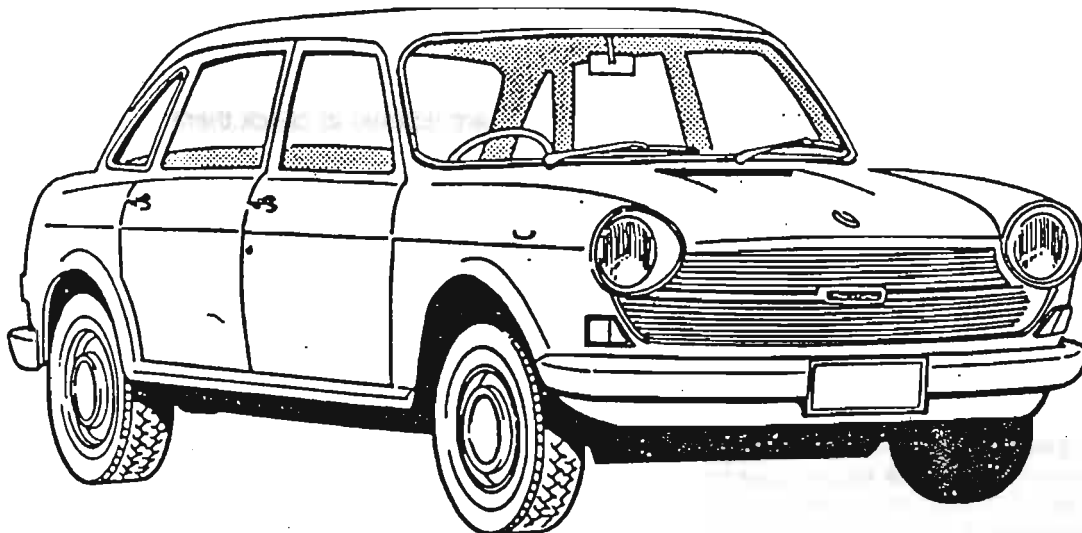
### FOR SALE

Austin 1800 Manual 1969. Good condition throughout and well maintained. Reconditioned engine. Rego expires November. \$1000. Contact Kathleen Phillips, telephone 805-803 or 807-224.

Reconditioned Engine. 20 miles only, \$800, George Parker, telephone 54.1253.



# LANDCRAB



Number 19

Canberra and District Austin 1800 Club

December 1989

Undoubtedly the heavy rain was responsible for the poor turnout at our last meeting. Apologies were received from Bill Wheeler and Keith Massey. George Parker still has those workshop manuals — unsold — and since George had these printed at his own expense (causing a bit of financial hardship) the club proposed to purchase half a dozen to be sold as required. Warwick Wright returned his \$20 refund (from July) and has kindly donated it to the club coffers; our financial balance now stands at \$219.04.

Another application and fee has been received and yet again from Goulburn. We welcome:

Ed LENNY 51 Prince Street (048) 212-015 MkII Sedan (automatic)  
Goulburn NSW 2580

The All-British Day saw a good turnout of vehicles from all the 'Pommy' car clubs and we were no exception. We exhibited both MkI and MkII sedans including Bill Wheeler's English model; Warwick Wright brought along one of his utes so we were well represented. One of the sedans was displayed with all the seats laid down in camper fashion and various information was displayed on cards on each car. Our 'Landcrabs' generated much interest among the spectators with many questions asked. I suggest that before our next public outing we make up a large Landcrab sign with a pole at either end for display. Whilst on the Landcrab topic, Warwick has offered to make up some T-shirts screenprinting our design or logo on the front, and he invites our ideas, drawing or design — so come on you budding artists!

On Thursday, 19 October, I attended the quarterly meeting of the Council of Car Clubs held at their new venue in the Weston Creek Football Club in Stirling. Among topics discussed was general insurance cover for financial car clubs within the council which participate in events and static car displays such as the annual Wheels show. Several approaches have been made to the various insurance companies which have so far proved unsuccessful. However further attempts are planned with the results to be discussed at the next meeting. [Following the Annual General Meeting the financial balance of the Council of ACT Car Clubs was \$1332. The next meeting will be at 8 pm on Thursday, 25 January 1990.]

There exists a body known as CAMS (Council for Affiliated Motor Sport) which cater to all car clubs — for around \$3 per member a \$25 million cover would apply. To date only the MG and Celica Car Clubs are members. For a large club \$3 per member would represent a large figure but, as pointed out at the meeting, it is excellent value individually.

The Wheels 90 event is to be staged at the ACT AFL Football Oval in Phillip on Sunday, 11 February. Orders are currently invited for the Wheels 90 badges (cost \$2.50, the same as last year) and must be in by 1 December 1989. Last year saw many people miss out. It is cash with order and you may order through me on telephone 82.5262.

The ACT Council of Car Clubs have made up a bumper bar badge measuring 75mm, featuring the New Parliament House and coloured yellow and blue. An initial batch of 100 has been ordered and the cost is \$16. Again it is cash with order and first in is best dressed.

The Mercedes Club advise that they are holding a Concours at the East Basin foreshore on 26 November from 10 am to 3 pm and are looking for judges. Any takers?

During a recent water leak where I removed the radiator it was discovered that the bottom hose was just about ready to blow. Whilst the general condition of the hose was found to be okay, the base of the heater outlet pipe was very weak and soft. I was more than surprised as the hose was only a few months old. It was purchased from Morwood Motors but was definitely not a genuine article. The hose was the same as one without the heater outlet but in this one a hole was made and a union fitted to accommodate the heater pipe (presumably by the distributor) but is far from satisfactory and comes nowhere near the old BMC bottom hose with the bonded heater outlet pipe. Any members having these type hoses are advised to check them.

Should you have occasion to renew a stop/tail or a flasher light globe ... a word of warning. As you know one globe is a double-filament type and the other a single filament, single pole type. Should you inadvertently try to fit the wrong one in the holder, the brass ends can cause a short resulting in the resistor on the blue dimmer relay burning out. A new relay is the only remedy and, if you didn't know already, is to be found inside the driver's side of the boot access (being gained by removing the plate behind the trim). Another clue to a failed dimmer relay is that the flashers work okay during the day but do not when the side and tail lights are switched on.

Another problem cropped up a few weeks ago which, until now, was completely unheard of and concerns difficulty in selecting gears. Out of the blue and quite without prior warning it was found impossible to select first gear. However once the engine had warmed and having started off in second gear, first gear came good. If the car was left parked in first there was no problem the next time the car was used. A few weeks later the same thing happened again, only this time with third gear. Again after a kilometer or so it came good. This was indeed strange. If the car was left parked in first or third gear, that gear could be selected easily. The only problem was — which gear to leave it parked in? If left in first, that gear was easily selected whilst third was not, and vice versa.

Pondering over this strange occurrence one was confronted with the possibility of a worn synchromesh or selector mechanism, or perhaps the problem was in the change speed control box (gear lever housing). The latter was first suspected and the gear lever removed along with the bolts holding the top half of the control box ... perhaps the cables were out of adjustment? The change speed guide was checked along with the interlock arm and change speed jaws ... and 'yes' the cable adjustment was okay. The end of the gear lever was checked for any signs of damage and burring, but this too was okay. Having reassembled everything we were back to square one. Was the trouble in the gearbox or selector mechanism? This was unlikely for two reasons. Firstly, first gear and its cable is entirely separate from third gear, both of which operate each selector and synchro independently. Secondly, no problem was experienced with either second or fourth gear — anyway the gearbox performed and sounded normal once the engine has warmed up. Curiouser and curiouser ... what was it? The problem was mentioned to Tom Bray during a recent conversation and, after relating all of the above symptoms, he said "Oh, I know what that is, but first some questions." Had the oil been changed recently? Yes, but it was well overdue. Was an additive used? Yes. What oil was used prior to the last oil change? Castrol HD (heavy duty). Do the gear-change cables leak? No, they are fairly new. "Ah, well" said Tom "that's definitely it!" The trouble was hydraulic lock up.

It turns out Castrol HD is an unusually thick oil (Castrol has since discontinued it) and this, coupled with an overdue oil change, caused the thicker oil at the bottom of the sump/gearbox to slowly exude into the gear cables. After a while — especially overnight AND in winter when the oil is really cold — it would not displace the air along the gear cables and resulted in a hydraulic-like action rather like when you try to use a bicycle pump with your finger over the hole. A simple test confirmed the trouble. Exerting a firm and steady pressure against the gear lever, it was felt to move very slowly and gradually until fully engaged in first or third gear. Of course, had the gear cables leaked as most do, the oil would have leaked on the ground. The remedy? Unfortunately the oil had to be drained and the cable housing unbolted from the gearbox and left to drain and/or preferably left to soak in a container of petrol, kerosene or similar whilst working the gear lever several times in order to flush the thick oil out.

Mkl Owners: Next time you change your oil and filter, wash away the oil residue at the base of the filter housing where you will invariably find a thick sludge build up which is so often overlooked.

Warwick Wright has a contact in Lismore who can sleeve master and slave cylinders in stainless steel for around \$9 a pop. If there are enough of us interested perhaps we could forward a batch. Give me a ring on 82.5262.

Our next meeting will be on Monday, 4 December, at the Canberra Yacht Club. See you there.

Remember ... You're travelling First Class.

Mick

### FOR SALE

Motor/manual gearbox complete with gear change and cable assembly. Suit Mkl. \$700. Andrew McGregor 89.6330 (w) or 86.1807 (h).

Five or six 1800s for \$50 each. See Len in his yard opposite the Sandblasters on the Minor Industrial Area, Eubank.

# BMC 1800

Following the success of their 1800s in the 1967 Danube and Alpine Rallies, BMC then prepared a team for the 1968 Safari and Daily Express London-Sydney Marathon events. The car driven by Michael Scarlett early in 1969 had just returned from Australia, where Paddy Hopkirk had just taken a fine second place overall, behind Andrew Cowan's winning Hillman Hunter.

The BMC 1800 had a very short 'works' rallying career, and the Marathon performance was really the climax of it. For the 1969 season British Leyland (formed in 1968) turned to racing their Mini-Cooper S models, and for 1970 they looked to the big Triumph 2.5 PI instead. The 1800 was neither fast enough, light enough, nor nimble enough to be a winner, and for that reason it was soon discarded.

Looking back on the magnificent Daily Express London-to-Sydney Marathon of 1968 one can't help thinking how under-reported the event was. It couldn't really help it – a rally or road-race (call it what you will) of that length is pretty difficult to cover fully from every competitor's point of view, yet every runner who got as far as Bombay, let alone Sydney had some tales to tell. We went to British Leyland's special tuning department at Abingdon (it really is a bit Leyland now too – amidst all those Minis and MGs we saw two Triumphs) to hear and see a little of the story behind British Leyland's second place Austin 1800 driven and crewed by Paddy Hopkirk, Tony Nash and Alec Poole.

How does it differ from other rally 1800s? Not all that much; from standard 1800s – well, quite a bit, like all rally cars. Many of the details are ones first used or else found necessary on 1800s for the East African Safari. Starting with the power unit and transmission, the engine is bored out 0.040 in. to increase the capacity to 1,845 c.c. The cylinder head is standard Morris 1800S, that is to say it has a 9.5-to-1 compression ratio instead of the usual 9.0-to-1. A high lift camshaft is fitted, the valve springs are heavy duty and the inlet manifold is polished and matched. Twin 1.75 in. HS6 SUs are used.

The two air-cleaners are unusual in that they are joined together by a piece of trunking like Siamese twins. If it looks as though the car has to voyage through heavy flood water, a plastic plug is put in the offside air-cleaner's trumpet intake and a piece of flexible hose is connected to the other trumpet, now the sole means by which air enters the engine. The other end of this hose inhales air from the cockpit, so that the engine room can be completely flooded without water getting into the cylinders. This was first used on the Safari car.

The Rootes Hunter which won had a high-compression cylinder head used in Australia where

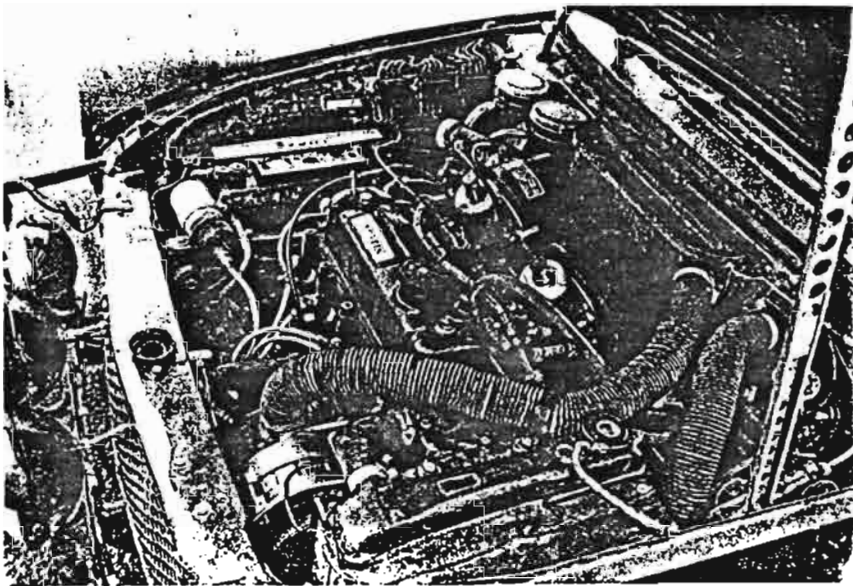
good petrol was available, and a low compression one used as far as Bombay. (In actual fact high octane fuel was available for most of the way.) In the 1800, a simpler solution was used – an ignition timing adjustment controlled via a cable and lever from the cockpit. Its quadrant rim was marked 1, 9, 8, 7, 6 which corresponded roughly to 100, 90, 80, 70 and 60 octane fuel. Special Tuning claim no great accuracy for the ratings of this 'octane selector' (to use an old-fashioned name for it) but it did the trick.

The engine has a very flat-topped power curve – 100 bhp at the flywheel at both 5,500 and 6,000 rpm (Morris 1800S figure is 100 at 5,700), of which 77 are available at the wheels according to Abingdon's rolling road. All-up weight with 26 gallons of fuel on board (plus crew, etc.) was 1.5 tons. An oil cooler and an extra, small radiator are mounted behind the grille.

Changes to the transmission amount to a lower final drive ratio (4.1-to-1), a high ratio second gear and a heavy duty clutch plate.

Turning to the suspension, the biggest differences are in the Hydrolastic units themselves. Normally the rear one is smaller than the front; it is in fact the one used on the 1100s. On this car a front unit replaces the usual rear one so that identical sizes are used front and back. They are modified to give slightly greater ride height, this also being partly achieved by higher pressures in the Hydrolastic lines. It is interesting to note that although one gets the impression from the handbook of any Hydrolastic BMC car that the line pressure is the important thing when correcting low-sitting suspension, Special Tuning in fact adjust the pressure until the car's height relative to the wheel centres is right, to a certain extent regardless of how different the pressure may be from standard. Hydrolastic

Under the aluminium bonnet: note trunking from the heater cold-air intake to the alternator, unconnected shorter trunking for the 'siamesed' air-cleaners, the twin reservoirs for the front and rear brake cylinders and the substantial lamp brackets





Open plan office. The foot dip-switch in the middle was for the siren and roof flashing light (which some Australian policeman insisted be taken off). The 'octane selector' is just visible above the handbrake; two separate washers lived each side of the handbrake. Instruments are (from left) 130 mph speedo, fuel voltmeter, 0-110 deg temperature gauge, tachometer, and 0-100 psi oil pressure gauge. Watches (removed) were on the left of the Halda Twinmaster. The alternator control box and some fuses are in front of the steering column; the entire panel was quickly detachable. Note fence across passenger's shelf, to stop things falling out



Spacious back seat: the front passenger seat is not the original, but the extra divided part behind is the rear section of the bed-cum-seat (made from a standard 1800 reclining seat) used up to Bombay. In Australia, the co-driver had to be up front

lines – indeed, all electric, hydraulic and fuel lines – run through the interior of the car along each side of the floor. The pressure bleeding valves are found in the back footwells and (as on the Safari car) a normal workshop. Hydrolastic adjustment hand-pump is mounted on the back bulkhead on the left-hand side. By this means, quick adjustment of ride height can be made anywhere any time. Aeon hollow rubber spring bump stops are incorporated at the rear and at the front the tie-rods are made adjustable.

The wheels are magnesium alloy Minilite 5.5 in. rim ones which except for the crossing of the Nullabor plain carried Dunlop SP44 Weathermaster covers; the Nullabor had only recently been re-graded and was smooth enough to encourage 175HR13 SP Sports to be used for what turned out

to be a flat-out blind; they were on the car when we tried it. Two spares are obvious on the roof and another two were kept in the boot.

The split-circuit brakes have twin Girling master cylinders worked through a whiffle-tree with a vacuum servo mounted underneath the fascia on the passenger's side (no room under the bonnet!) and working on the front brake only. No rear limiting valve is fitted.

Without any doubt whatsoever, the 1800 in standard trim has one of the strongest body/chassis units in production. Each of the five cars built for the Marathon (four works ones for Aaltonen, Fall, Green and Hopkirk plus a fifth for the RAF Red Arrows team) started life as a bare body unit delivered to Special Tuning and assembled there; any 'tweaks' known to be needed would certainly be carried out, yet even a searching look at the car shows no glaringly obvious bits of buttressing, like the top cross-member added on some competitors' cars to keep MacPherson-strut mountings from leaning inwards when tired. The kangaroo bar is attached to the car at five points. Two bottom tubes are fixed via big plate brackets running inside the grille, the two top ones attach to the insides of the wing 'walls' and a central lower one looks like a conventional car's starting-handle tube which is welded to the very strong front cross-member. This also serves the big auxiliary lamp bracket. A similar tube at the back supports the external rear step.

In order to lighten the car a little, or perhaps it is more accurate to say in order to counteract a little of the added weight, a few things are lightened. Bonnet, boot and door panels are aluminium alloy and there are perspex windows at the rear. And someone's done an elaborate job of drilling lightening holes in the bonnet stay.









The test drive in murky Berkshire weather, with the back lifting slightly as the throttle is lifted. Light- or just sticky-fingered spectators removed the first set of advertising transfers at Kabul

Inside, one is immediately struck by the fact that using one of the few contemporary models made which are truly roomy enough to be called *family* cars as a rally device makes things a lot easier when it comes to comfort for three men at work for 10,000 miles. There is a comprehensive (carefully padded) roll-cage installed but it doesn't dominate the interior as they usually do. The original seating arrangement used for most of the run wasn't in the car when we saw it; this had involved an ingenious bed for the rear man. Irvin full-harness is fitted.

An unusual thing about the Marathon is that with the strong likelihood of people relatively or even completely strange to the cars having to work on them, it was essential to make this as easy as possible. Dash panels which are completely detachable are normal practice, but really thorough labelling isn't. The customary black facia and full instrumentation is there; the watches had been removed long before we got near the car, mainly as a protection from pilfering (by souvenir-hunting spectators, not journalists). One small detail which may amuse 1800 owners who are occasionally irritated by things falling out of those useful facia parcel shelves is that this car had a 2 in. high 'fence' across the edge.

British Leyland very kindly entrusted the car to us for a couple of hours driving, an honour in itself which was all the more trusting when we learnt that they were shipping it to the Brussels show after we'd finished with it. It was a most interesting experience, especially after I'd been lucky enough to try the winning Hillman Hunter a little earlier. Rally 1800s have a 'feel' all their own. Not surprisingly they aren't as staggeringly quick as their Ford competitors; with the extra weight and after 10,000-odd miles, this one was no flyer, understandably. (Neither was the Hunter.) But thanks to slightly higher-ratio steering and all the other modifications, the car handles like a magnified Mini which after all is what in many ways it is. It is

just as taut and you can put it on to any line with absolute precision. It rolls very little of course. Unlike the standard 1800s it will kick its tail out tidily if you go fast enough and lift off. The brakes are heavy but respond well, there is plenty of 'feel' in the steering through the big fat-rimmed leather-and-aluminium Moto-Lita steering wheel.

It looked more used than the Hillman, mainly because of the crinkly bonnet. The engine sounded as though there were some fairly wide clearances in one or two places. The driver's door shut stiffly though no wear was detectable in its hinges. The gearchange worked well and there was still more than adequate synchromesh. Like the Hunter, it felt as if it would have made the return journey all right, though not quite so quickly.

Various things happened to all four works cars. This one got to Bombay unscathed but 'hit a rock or a big hole in Australia' which broke the steering rack housing. (The number of malevolent holes in Australia uncovered by Marathon cars is notable.) Aaltonen's car was the only one fitted with a de-ditching winch which the crew had to use as a substitute for a torn-out front tie-rod between Teheran and the Iran border; he later had some slight gearbox bother. Fall's car broke a top front suspension arm somewhere nearby; a local man made a very good job of re-welding this. In his native Australia, Evan Green lost a rear hub and wheel after some possibly overtightened wheel bearing overheated and failed. A message written in the sand for a flying farmer to read was how they got mechanics to that one. All in all, a fascinating exercise; the 1800 is a formidable contender in the family car stakes – which is at last gradually being acknowledged – and deservedly so. It is not an ideal rally car because of its weight, but second place overall in such a chancy event as the London-Sydney (and second in the team section) is no mean achievement – a total of nine of them finished.

