



ALVIS CAR CLUB
VICTORIA
(INC.)

NEWSLETTER

CLUB ROOMS:- at the rear of "ALVISTA", EDGAR ST., MALVERN. Near Harold Holt Memorial Swimming Pool.
MEETINGS:- THIRD FRIDAY OF EACH MONTH (EXCEPT DEC./JAN.) AT 8.00 pm.

**** EVENTS **** EVENTS **** EVENTS ****

ECONOMY RUN SATURDAY 25TH NOVEMBER 1989

Meet at 12.30 p.m. at **Commercial Hotel South Morang** (Cnr. Plenty and Gorge Roads) for a light lunch in the Pub. Then drive for approximately 2½ hours to finish at a secret (but attractive) spot (NOT the Creed's!). Distance not disclosed. You will need a Melways.

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CHRISTMAS BREAK-UP BARBECUE SUNDAY 10TH DECEMBER 1989

B.Y.O. Everything: Food, Drink, Alvis, Yourself, Spouse, Kitchen Sink?
David and Moira Wischer's Home
Avonlea, 2 Craig Avon Lane,
Merricks North.
Melways 161 J 11
Note the Date 10th December 1989 -- say 12.30 p.m.
Bring your wife or partner plus eats plus grog!
Two Christmas Hampers to be raffled & won!

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A.C.C.V. N/L. 11/89. P.2.

PRESIDENT'S MESSAGE

Christmas is almost here once again and this will be the last Newsletter you receive until 1990 - (January 1990!) and the start of another decade. So Merry Christmas and a Happy New Year to all Alvisti. Christmas is a time of good cheer when we can show friendliness to our fellow man - not only Alvis owners but also owners and drivers of other less blessed makes. And at this time of year, it would be less than charitable to suggest that I see the world through red triangular-shaped eyes (even if the suggestion might contain a grain of truth at other times of the year).

The Club holds its last general meeting for this year on the 17th of this month. But there is another opportunity to congregate with your Alvis friends at the Christmas Barbeque at the Wischer's residence in Merricks North on the 10th of December 1989.

Then 1990 will be on us with a rush for an informal meeting in January. Back into the saddle and into harness for another busy year working towards a National Alvis movement and looking forward to our First National Alvis Rally in Echuca in 1991.

BOB GRAHAM.

ELECTIONS.

Great political in-fighting took place to secure election to the Committee of the Alvis Car Club (Vic) on Friday 20-10-89 at the Election Meeting. The successful contenders are listed below and the respective offices will be assumed at the Annual General Meeting to be held in February 1990.

President	R. Graham
Vice President	R. Wilson
Secretary	R. Roberts
Treasurer	J. Twomey
Editor	J. Hetherington
Club Captain	D. Caldwell
Librarian)	
)	R. Henderson
Social Secretary)	
Spares Registrar	
Vintage	G. Hood
P.V.T.	A. Tope
3 Litre	K. Bruce
TA 14	R. Graham

(Isn't it great to see new blood and young people on the Committee next year!)

A MERRY CHRISTMAS TO ALL MEMBERS, READERS, FAMILIES, ALVISTI & ADMIRERS.

This is the last Newsletter for 1989: the next issue will appear in your letterbox, if not the newstands, in mid-January 1990. Please note that the closing date for copy for the Holiday Edition is **WEDNESDAY 3rd JANUARY 1990**. The editor would like to thank all those who have contributed to the N/L during 1989. Please remember that what you read depends upon what you contribute. In the computer world they talk of "GIGO" - garbage in; garbage out. In this field it is "NINO"- nothing in; nothing out. The Club held its Annual Dinner towards the end of October. I am told that 38 members sat down to a good evening at the Clayton R.S.L's.Club Anzac Room. Apparently the lies were not as big or as colourful this year as in years gone by, but fun was had by all who attended. **ROY HENDERSON** organized the event. Our thanks to him. The pre-Adelaide Grand-Prix "Lucas Rally" stopped the night in Shepparton, last weekend, en-route from Melbourne to Adelaide. **JOHN MITCHELL** was among the officials, but I did not get a chance to meet him. That's hardly surprising for there were in excess of 200 cars present and what a glorious extavaganza of cars there was. The quality of restoration and presentation was on the whole, superb. Regrettably, not an Alvis among them. That must be remedied next year! As suggested in the October N/L, **RON WILSON** and **BOB GRAHAM** were not successful in retaining the P.V.T. sash in the VSCC Two Day Rally in September; there are reports that they were "sonically nobbled" but they are not complaining. Good luck to them for being the only Alvis team to try. I saw some more superb cars at the Lancia Rally Concours in October. Curiously I found no evidence of cross fertilization of interest between Alvisti and Lancisti. Someone will tell me I am wrong! I did have the opportunity to apologize to **MILDRED**, who attended the Lancia event in a Fiat. Last month I reported her name as being Matilda when she climbed Rob Roy in the same Fiat. Perhaps **RICHARD TONKIN** or **RICHARD UNKLES** can explain why the poor mut is confined to a Fiat. Is she frightened of hares?

ED.

BRIAN CREER and his FWD ALVIS

Now that the final instalment of "So I Bought This Alvis" has appeared in the Newsletter it may be appropriate to identify both the car and the author.

This article, a good ripping yarn when it first appeared in "Australian Motor Sports"in 1966, has lost some of its original appeal with repeated "lifting" (it first appeared in the Newsletter in April, 1974.) Also, it is not the most complimentary piece of writing about an Alvis; and in fairness to Chassis 7192 (Car No.11988) it deserves better treatment.

This supercharged FD series short-chassis front-wheel-drive Alvis left the Works on 3rd December,1928, with its smart Le Mans style body (No.7026, by Cross & Ellis) finished in shining blue, and was delivered to the London Alvis agents Henly's who arranged for its registration as XV 2995. Fitted with a short radiator, which was chrome-plated and not painted as was often the case with FWD Alvises, this sleek two-seater had its front end cowled in the manner illustrated in the upper photo on page 146 of Kenneth Day's newest edition of his book, "Alvis: The Story of the Red Triangle" or in the plate opposite page 176 of Hull/Johnson's "The Vintage Alvis".

ACCV N/L 11/89. p.4.

Who brought this Alvis to Australia, and when, is not known to the writer, but the car was bought, in 1956, by a young architect in Broken Hill, NSW, Mr. N.S. Webb. Neville Webb was at that time the president of the local branch of the Vintage Sports Car Club of Australia and was keen to use the Alvis in competition. He had new gears cut in Sydney and did other work to restore the car from its apparently run-down condition. The car was registered in South Australia as 323.426 which suggests that Webb may have bought the car direct from Brian Creer.

Early in 1960 this FWD Alvis was sold to another enthusiast in Broken Hill, Brian Rowse, in a partly dismantled state. Rowse, being a mining engineer, expected he would quickly restore the car to running condition, but by 1961 was wishing to dispose of his recent acquisition which was now reduced to many parts. The next owner is believed to have been a Les Lees who brought the Alvis to Victoria in 1962. The car is thought to have then been owned by a John Cole who, in turn, sold it to Max Kennedy who was then living in Victoria.

Mr. Kennedy had also acquired another FWD Alvis in pieces at about this time (1972). This second Alvis was Chassis 7278 (Car No.12096).

The short radiator of Chassis 7192 was sold to Eric Dunbar; the mudguards, cowl, bonnet, wheels and hubs (ex Chassis 7192) were sold to John Ham; and to Max Houston went the carburettor. The engine, No.7654 (ex Chassis 7192) is now owned by Bruce Jorss. The remainder of FWD Car No.12096 (ex Chassis 7278) was reconstructed on to Chassis 7192. This rebuilt FWD, which resides in Queensland, now has a white body and looks very smart.

The FWD Alvis is not so well known today as is the more ubiquitous 12/50 model but, despite this, the FWD model helped to make a name for the Alvis marque notwithstanding the fact that only about a dozen FWDs ever ran on Australian roads or race tracks.

B.P. Creer who so graphically described the near destruction of his Alvis (Chassis 7192) was probably more at home with engine-less aircraft which at least could not catch fire. At the age of 13 he was a founder member of the Adelaide Soaring Club and later became its chief instructor as well as being a committee member of the Broken Hill Aero Club and the Royal Aero Club of South Australia. He did continue to enjoy vintage machinery but in the shape of the older type of light aircraft of which he became an authority and wrote a book, "Last of the Breed" which catalogued most of the vintage type of light aircraft which were known to have been on the Australian Register at some time up to 1964.

ERIC CUNNINGHAM

WANTED KNOWN.

Does anyone know the present address of John Savage who owns a TA 21 DHC and was last located as a member of the Australian Army at 140 Signal Squadron, Kelvin Grove, Queensland.

Also Kevin Waters who used to live at an address in Townsville.

If you have any information please contact Dean Prangley, 28 Blackshore St., Indooroopilly. Queensland. 4068.

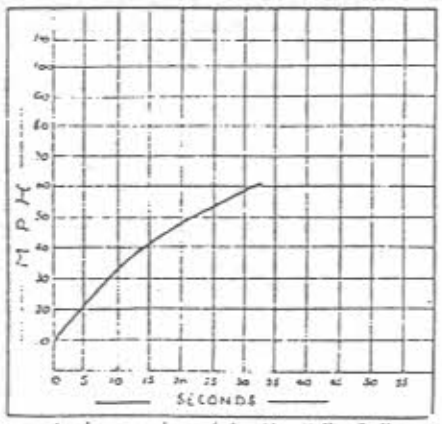
A WEEK-END WITH THE ALVIS "FIREFLY"

THE increasing standardisation in the design of modern cars has naturally led to similarity in control, so that in the ranks of cheaper cars there is very little to chose between them in this respect. This state of affairs is largely brought about by mass production methods, and does not apply to those cars which are built, not to a price, but to the designer's ideal.

This train of thought passed through the writer's mind when he first took over an Alvis "Firefly" Sports Saloon for a week-end test recently. His previous mount had been a popular light six, which did its job adequately without revealing a trace of character and without making any demands on its driver—except at high speeds, when concentration was required to remain in a straight line. What a difference in control was needed for the "Firefly," and with what correspondingly greater pleasure! Alvis cars have always been renowned for a rock-like solidity and strength, and this new model is no exception to the rule. Tautness and robust construction are one's first impressions of the car, and one felt unmistakeably that it was descended from the famous old 12/40 model of ten years ago.

For sharp turns at walking pace on full lock, the writer found the steering rather heavy, especially in comparison with the light six he had previously been handling. But you can seldom have it both ways. The effort required at low speed was more than counter-balanced by the inherent steadiness of the Alvis when travelling fast over a rough surface, a circumstance in which the light six would be a "handful." The steering is high-geared, with pronounced caster-action, so that cornering is at all times safe and controlled. After all, the majority of a "Firefly's" life will be spent in cruising at 50 m.p.h. on main roads, and at this speed the steering is effortless and at the same time positive.

Suspension can make or mar the steering qualities of a car, so that a description of one must inevitably lead to an account of the other. The "Firefly" holds the road beautifully at all speeds and although the shock absorbers were adjusted for fast work, no discomfort was experienced at low speed. Undoubtedly the long wheelbase, 9' 10½" is partly responsible for this, and indeed the general riding qualities of the car belong to a machine of greater size and horse-power.



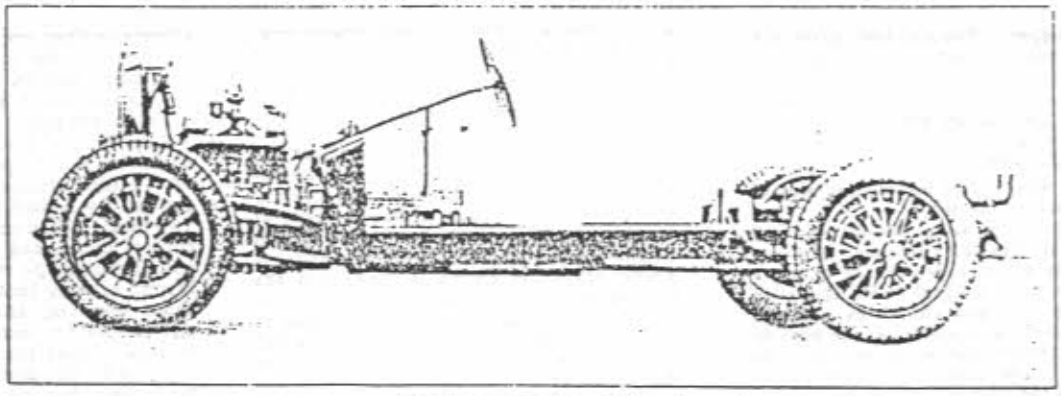
Acceleration chart of the Alvis "Firefly."

It is common knowledge that a car, to be safe at its maximum speed, should be so designed that the chassis can hold the road perfectly at speeds a good deal higher than its actual maximum on the level, thereby providing a margin of safety. In order to test this margin of safety it is our custom, whenever possible, to take test cars to a certain stretch of road, straight and downhill. Here the car is driven at a higher speed than can be hoped for on the level, and a thorough test of the road-holding, and incidentally, the engine of the car under review obtained.

The Alvis "Firefly" came through this trial with flying colours. 70, 75, 80 m.p.h. was registered by the speedometer, and at this speed the car held the road like the proverbial leech. As for the engine, we had already demonstrated its readiness to turn over smoothly at 4,700 r.p.m. on third gear, so that we had no qualms about its safety. The speedometer, by the way, is accurate.

A 12 h.p. saloon with the dimensions of the Alvis "Firefly" naturally requires a long stretch of road in order to reach its maximum, and on such a highway we succeeded in reaching a speed of 75 m.p.h., with a full complement of driver and three passengers. On any good main road 70 m.p.h. can be attained, but special conditions are necessary for the extra 5 m.p.h. to be gained. The "Firefly" cruises without any effort at 50 m.p.h.

The engine is flexible at low speeds providing that it is not required to pull too hard, and the ignition control on the steering wheel quadrant enables satisfactory results to be obtained. An owner of a "Firefly" will not be of the type of driver who wants to creep about on top-gear, and will probably prefer to use the gear-box as should be done with a car of



The new Alvis "Firefly" in chassis form.

No prizes for guessing who contributed this article! Thank you, Lon. Ed.

ACCV N/L. 11/89 p.6.

its specification. By dropping down to second the car accelerates well even from walking pace, and on this gear a maximum of 38 m.p.h. is possible. Third is on the low side, which benefits the get away from usual town traffic. 50 m.p.h. was reached in comfort on several occasions, although it is probably better to change up at about 45 m.p.h. for the fastest acceleration.

The gear change requires a little practise in order to become completely at home with it. Precise timing has to be effected for quiet changes, the slightest delay making it impossible to engage the gears. Once the correct pause has been learned, however, no difficulty is presented at all. Unusually, changes down can be made easier at first than upward "gear-shifts," that from top to third being particularly delightful.

The brakes are well up to their work, and although they require considerable pressure for maximum operation, they can be applied to the exact amount necessary. The foot-pedal has a large surface, which adds to the driver's sense of security, and indeed the angle of all the pedals has been carefully designed—a point not as common as one would imagine.

The body of the car we tested was a coachbuilt saloon of generous proportions and very pleasing lines. Four wide doors enabled the interior to be reached without any acrobatic contortions, and the driving position was beyond criticism. A large boot at the rear provided plenty of room for luggage, and altogether the car was admirably suited to long distance touring. Our only criticism of the body was that the front doors, being hinged in the middle of the car, allowed a draught to enter the front cockpit, while another breeze seemed to find its way into the rear compartment from the foot-wells and from under the seat. These faults, however, may very well be only found on the actual car tested—and in any case should not be difficult to remedy. The equipment was complete, the Rotax headlamps giving a splendid driving light, and the British Berkshire screen-wiper coping satisfactorily with a blizzard of snow and sleet.

The price asked for the Alvis "Firefly" saloon is £495, and when one considers the strength of its construction, its lively performance, low tax, and the famous Alvis wearing qualities, the worth of the car can be readily appreciated.

A TECHNICAL DESCRIPTION OF THE ALVIS "FIREFLY."

THE appearance of the "Speed 20" early in 1932 was an event of the first importance for fast motorists. The low centre of gravity made possible by the double-drop frame, the excellent brakes and unit construction of engine and gearbox were all highly successful developments. All these features and various others which will be enumerated were used in bringing the four-cylinder "Firefly" into a position as advanced as that of the six cylinder car.

The cylinder dimensions of the "Firefly" are the usual 69 and 100 mm., giving a capacity of 1,496 c.c., with an R.A.C. rating of 11.9. The cylinder head is detachable, and the cast-iron cylinder block is bolted to an aluminium crankcase. The overhead valves are operated by push-rods and the rockers and ball-ends are positively lubricated. A semi-down-draught S.U. carburettor, supplied by a petrol pump, is bolted to a V shaped induction pipe, which is in contact with a flange on the centre exhaust branch to form a hot-spot. The exhaust gases are led away from the front end of the engine, avoiding any possibility of overheating in the driving compartment. Coil, distributor and plugs are all accessible on the off-side of the engine. The distributor embodies an automatic advance and retard with an additional hand control on the steering column.

The aluminium alloy pistons carry 2 compression rings and I scraper. The big-end bearing surfaces, which are of white metal, are cast integral with the steel connecting rods and the three bearings for the balanced crankshaft are carried in webs extending the whole width of the crankcase. The camshaft is driven by chain from the rear end of the crankshaft, a lay-out which theory approves, but which finds a place on all too few cars. Its practical value is shown by the fact that on engines fitted with this rear dual location timing chains last at least four times as long as when the drive is taken from the forward end. The torque damper which was fitted to the 12-60 engine has been found unnecessary on the "Firefly" and is therefore not fitted.

The engine is cooled on the thermo-syphon system, and the heat is dissipated by a large honeycomb radiator. The cooling water passes from the block to the cylinder-head through an aluminium casing at the rear of the engine, and there are no passages which depend for their tightness on the cylinder-head gasket. The flow of all the cooling water along the whole length of the engine and back, and the generous water spaces round the hot parts of cylinder and head should give complete freedom from local overheating, a most important consideration in the case of a small high-efficiency engine.

The oil pump is gear-driven from the camshaft and forces oil through a Tecalemit filter to the various bearings and there is another filter on the suction side. A gallery along the side of the engine supplies the main bearings with oil, whence it travels to the big-ends through the drilled crankshaft. Filter and oil filler are accessibly placed on the near side of the engine.

Engine, clutch pit, and gearbox are bolted together to form one unit of immense strength and the whole is flexibly mounted at three points, one in front of the engine, and the other two brackets at the rear end of the clutch housing. A single dry-plate clutch is used, and the four-speed gearbox has a silent third gear and a centre ball change brought back so that the lever is under the driver's left hand. The speedometer is driven from the gearbox.

The propellor shaft is of the open type tubular, and of large diameter. It i fitted with Hardy Spicer joints front an rear. The final drive is by spiral bevel and the fully floating rear axle, a featur not often found nowadays, should ensur a long life for this much-stressed part o the transmission.

The chassis frame is double-droppe following the well-known lines of the Spee Twenty, but the dimensions are naturall somewhat less, the Firefly's wheelbase an track being respectively 9ft. 10½ins. an 4ft. 4ins. against 10ft. 3ins. and 4ft. 8in on the larger car. The double-droppe frame allows of a low floor line witho restricting head room, brings down th centre of gravity very considerably an allows plenty of movement for the axle without striking the side members. Th latter are braced by six cross members most noticable of these being the pressin which unites the side members at the fron mounting of the rear springs. Ha elliptic springs are fitted all round, wit Hartfords back and front, those at th rear being carried parallel with the axle A Marles-Weller steering box is used with an unusually long drop arm.

The brakes are identical with thos fitted to the "Speed 20" and operat on 14 inch drums. The shoes are ex panded by a floating lever which carrie two pins. When the lever is moved by th control cable, one pin bears against th end of each of the two shoes. The floatin layout ensures that each shoe exerts th same pressure, and the brakes have a self-energising action. Another good feature is that there is no joint or leve exposed to dirt and wet. A knurled knob projecting through the floorboards at the

Continued.....

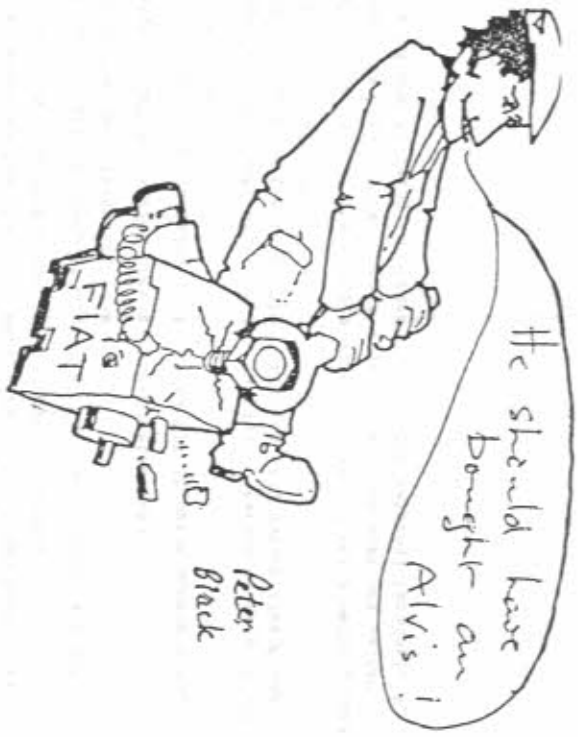
ACCV N/L 11/89 p.7.

driver's side operates a master-adjustment, while there is an adjustable cable stop on each brake-cable to allow the effect of all four brakes to be equalised.

Wire wheels with knock-on single centre nuts carry 30in. by 5in. Dunlop tyres.

The electrical equipment is of the normal type, the dynamo being driven from the timing chain. Rotax head lamps are used and the two six-volt batteries are arranged one on either side of the propellor shaft. The lights are controlled by a lever in the centre of the steering wheel, and the switching mechanism is accessibly mounted on top of the steering-box.

Though the chassis is shorter than that of the "Speed 20," the 4 cylinder engine of the Firefly actually allows a greater amount of space to be devoted to passenger accommodation than on the larger car. A particularly handsome saloon with a sunshine roof, and also a drop-head coupé are offered at £495, while the open four-seater costs £20 less. A road-test of this latter model appears elsewhere in this issue, and shows that the traditional high performance and comfortable travel which one expects in an Alvis car has been more than maintained.



THE ALVIS "SPEED TWENTY" FOR 1933

ONE of the most successful sports cars of 1932 was undoubtedly the Alvis "Speed Twenty." Its performance was terrific, both in acceleration and in maximum speed, and the open sports model could be purchased for £695! No wonder the car was popular!

Many new models are altered after a year's use in private owners' hands, but so much forethought had been expended on the design of the "Speed Twenty" that the car remains absolutelyunchanged for 1933.

Here are a few details of the specification of the car. The engine has six cylinders of 73 x 100 mm., giving a cubic capacity of 2,511 c.c. The head is detachable, and the water spaces are particularly generous, in order to provide really effective cooling. An interesting point is that the gasket is not used to make a water-joint, for there are separate passages made between the cylinder block and the head. The four-bearing crankshaft is heat-treated and balanced, and a vibration damper ensures complete smoothness throughout its range of revolutions (it can turn over at 4,500 r.p.m.). The pistons are of special alloy, and the con-rods have bearing-surfaces die-cast into position. Situated at the rear of the engine, the camshaft and auxiliary drives are operated by Duplex chain, and lubrication is by pressure to crankshaft main and big end bearings, and to the valve rockers and push rod ends.

Petrol is drawn from a 14½ gallon rear tank by an A.C. mechanical pump to three S.U. carburettors. Ignition is by B.T.H. polar inductor magneto as well as special coil for starting in case the magneto should fail to function, which is unlikely.

A single plate clutch and 4 speed gearbox transmit the drive to spiral bevel rear axle and thence to the road wheels 14 inch brake drums, semi elliptic springs, one shot chassis lubrication and a double dropped frame complete the specification of one of England's outstanding sports cars.

The low chassis frame gives coachbuilders plenty of scope for bodies of beautiful lines. Vanden Plas (England) 1923, Ltd., have always been noted as specialists in sports coachwork and their range of bodies on the "Speed Twenty" Alvis are well up to their usual standard. Their models are a very good looking open four-seater, a two-seater sports, and a saloon. Messrs. Thrupp & Maberley, Ltd., turn out a beautifully finished sports saloon, which is entirely in accordance with this firm's reputation for luxurious coachwork on expensive chassis. Finally, the Mayfair Carriage Co., Ltd., produce a very striking saloon with beautiful lines, and here again a very high degree of finish has been obtained.

TECHNICALITIES

Beginners' Overhaul - The Rotax Startermotor.

The starter which is fitted to Fireflies, Speed Twenties, Silver Eagles (except 1936), Crested Eagles up to 1936 and 1935 Firebirds is the Rotax RMD 418. The 418 means that the diameter of the stator is 4.18 inches (106 mm.) It is simple, robust and well made - if heavy. Like the engines it serves it goes on working long after it is due for overhaul.

Few realise that, if saddled with an engine the ignition and mixture of which are wrongly adjusted, the starter has a hard time -- for the finger of the driver spends a long time on the button. If the valves or rings (or both) are in a poor state, it has a worse time; and if, to cap it all, the voltage is down before the button is pressed, then the poor machine has an impossible task. On the other hand the starter on a well-maintained engine, if fed from a well-maintained battery, will last for ever. After all it will only turn for two seconds each time....

I give below an idealised procedure which, if followed, will reduce volt drop (and so eliminate the starting handle) and lend new meaning to the phrase:'On the Button'. A sensation of achievement may well result - not to say euphoria.... Have a biscuit tin handy for the bits, a large and a small saucepan each full of petrol (one for rinsing), an old paint brush and a clean wooden plank for draining. If you fear the inflammable use paraffin....

Procedure

1. Clean the exterior and confirm that the angular position of the nose-piece is marked on the stator. (There were half a dozen such marks on the one from Moby Dick which I have just finished.)
2. Remove the inspection band. If pieces of wire and carbon fall out you are in for an interesting time.
3. Undo eight 3/16" BSF x 3/4" cheese-headed setscrews.
4. Clamp the stator horizontally in the vise (if it opens widely enough) using soft jaws.
5. Tap lightly with a soft drift on the outrigger bearing housing in the nosepiece, away from the vise. The nosepiece will detach itself and carry the rotor with it.
6. Look along the axis of the empty stator: you should see something like that shewn in fig.1; this reveals that opposite brushes are paired, one pair (A and B) being connected both to the external terminal, +,

(itself connected to the solenoid positive) and by an internal strap. Each of the other two (C and D) is connected to the stator (earthed) via a pair of field coils; C and D are also connected by an external brass strap, shewn dotted.

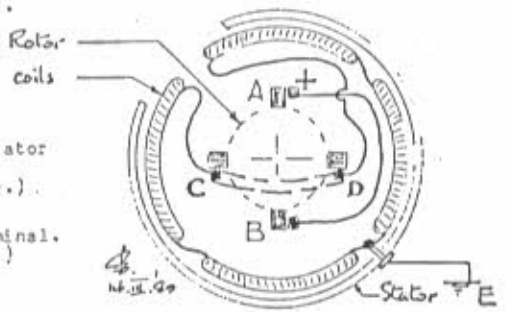


Fig.1

View looking along stator axis towards front of engine. (Not to scale.)

A = + = external terminal. (To solenoid.)

The coils are wound alternately clockwise and ACW so that the polarity of the field magnets alternates NSNS. The fact that, on leaving the armature the current then flows through the field (hence the term 'series motor') accounts for the enormous starting torque. This torque is greatest at zero speed and falls off as the speed rises.

7. Undo the cheese-headed screws on brush-holders C and D and put them in the tin.
8. Verify that the angular position of the endplate is marked on the stator.
9. Undo the four 3/16 " BSF x 1/2" setscrews which locate the front endplate; the endplate and the brushgear mounted on it will now come out with the fingers. Clean the tapped holes with a plug tap; you will be surprised by what comes out, namely, 56 years' dirt....

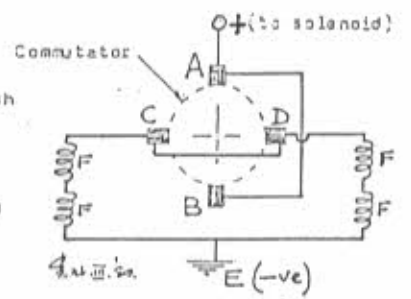


Fig.2

Simplified diagram of brush and field connections.

AB = internal strap
CD = external strap
F = field coil energising field magnet.

10. Scratch a letter on each carbon brush with a scriber (or other hard point) and the same letter on each brass brush-holder. In this way each brush will return to its original holder and the same way round. (The contact face is curved.)

ACCV N/L. 11/89. p.8.

ACCV N/L 11/89 p.9.

11. Remove brushes and clean in petrol.
12. Wash endplate in petrol and clean out bearing cavity.
13. Remove stator from vise, clean the two contacts and remove whatever is festooned round the magnets.

14. Place the nosepiece in the vise and inspect the fit of the shaft in the outrigger bearing. The rotor is held, axially, in the nosepiece by a circular plate located by four 3/16" BSF setscrews. This plate carries a rivetted brass housing in which are nine fibre washers, end to end, the rotation of which is prevented by a steel pin rivetted in place. The nosepiece is open to the atmosphere, faces upwards and could have been conceived as a repository for dirt. The makers provide the seal because they knew this. As the rotor bearings wear (and the rotor moves down in the stator) so does the seal material; and as to renew it would be a fag of Byzantine proportions (having a result of doubtful value) no-one ever does. The annular gap between the shaft and the worn seal may be closed on re-assembly (and quite satisfactorily) by the insertion of a half-inch washer , greased, between the seal plate and the spring anchorage.

15. Undo the four setscrews, withdraw the seal plate and rotor assembly from the nosepiece and wash the lot in petrol.

16. Clean the nosepiece and fit a new brass bush if wear is excessive (e.g. 1/16 inch on 1/2 inch diameter - yes, it has been known....) The bush (standard) measures 1/2" i.d., 3/4" long, 5/8" o.d.

17. The function of the spring is to increase the torque on the pinion gradually (if rapidly) from zero. The spring is held at the motor end by a special setscrew to a collar keyed to the shaft by a No.2 (?) Woodruff. (A similar setscrew locates the other end.) This setscrew will almost certainly be loose. Bend over the tab on the washer, remove the setscrew and pull off the spring with the pinion assembly attached.

18. Slide off the collar, extract the Woodruff and clean both it and the depression. Put the clean key in the clean depression and form an opinion of their affection for oneanother. Next, push the collar home and assess its angular movement by looking down the setscrew hole. If this movement is not zero the setscrew will have a hard time. A new Woodruff costs sixpence or so from Red Triangle.

19. The two setscrews have reduced ends and each should be tight in its hole when the spring is in position. With the spring (already) removed scribe an arrow on the setscrew head and note its position/direction when the screw is tight. Verify that there is sufficient space left

beneath the washer for the spring eye. If not, grind down the eye until the spring is just free when the setscrew is tight. Treat the other setscrew in the same way. If either screw is not tight the starter will have to come off again in 1992 and you will not be pleased....

20. Slide off the circular plate bearing the seal, clean it and find a half-inch washer for the purpose mentioned under para.14 above.

21. The rotor is now bare. If the commutator looks reasonable (no segment missing, solder cracked or wires dangling) put the shorter end in the drill (or other) chuck, arrange a steady at the free end, select the lowest speed and use progressively finer strips of emery cloth on the commutator until the copper presents a fine, smooth surface. Sharpen the point of a ratstail file and draw it lightly along each groove between adjacent segments. Removal of dirt from the (recessed) mica insulation reduces leakage current between segments and extends the life of brushes while enhancing their bridging ability. Don't overdo it.

22. Now for a calculation!
If a normal man (who is normal?) can crank for a short while (5 sec?) at three revolutions per second, then his cranking speed is 180 rev/m. (NB. A second is the time taken to say, deliberately: "one hundred and twenty one.") Let us suppose that our "normal man" is desperate (late for church) and manages 200 rev/m. The flywheel has 115 teeth and the starter pinion has 10 teeth; a small sum will reveal that the ratio is 11.5. Hence the corresponding starter speed is 200 x 11.5 or 2320 rev/m. I must say that this result surprised me.

23. Examine the three soldered bands of steel wire which prevent the conductors from leaving the slots in the rotor under centrifugal reaction. On Moby Dick those forming the centre band were missing. Some pieces about two inches long fell out when I removed the inspection cover and the rest were found inside, draped round the field coils. I replaced the reinforcement with enamelled copper wire wound on by hand under what tension I could muster and soldered.

24. Clean and examine the pinion assembly. The pinion carries an eccentric piece the function of which is to provide a gravity torque resisting axial movement and so maintain the pinion out of contact with the flywheel ring during acceleration. The piece has four internal teeth, the rear of the pinion being recessed to receive them. If one of these teeth is fractured nothing remedial can be attempted because each part is hard....

Re-assembly

This is the enjoyable bit because everything is clean and you know (a) that it fits (b) how it fits....

Procedure

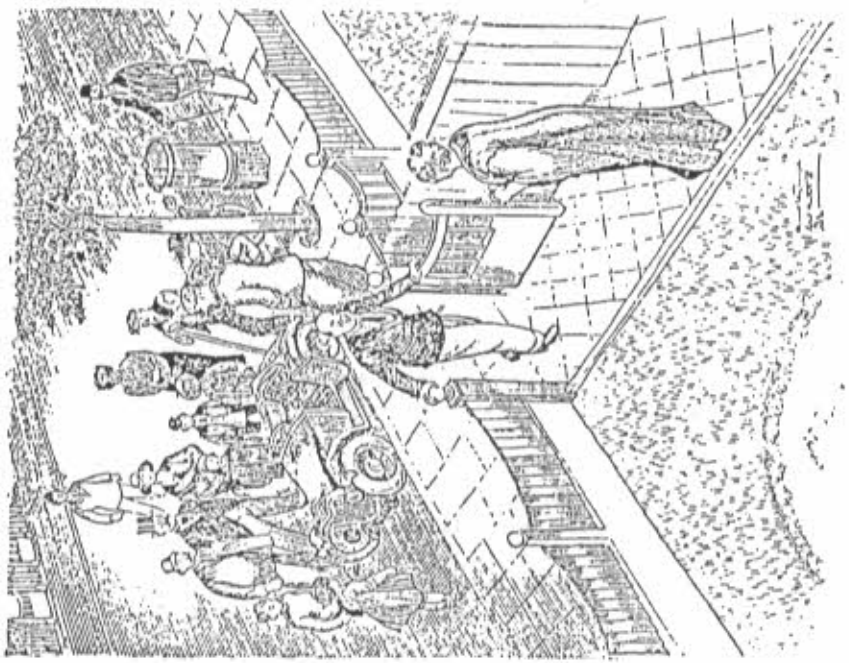
1. Grease lightly the longer rotor shaft and the one inch washer.
2. Slide on seal plate and washer.
3. Fit Woodruff and slide on collar and spring.
4. Attach spring to collar with setscrew, not forgetting the tab washer.
5. Slide on the pinion assembly and attach to spring with second setscrew, not forgetting the tab washer.
6. Mount nosepiece in vise using soft jaws.
7. Grease outrigger bearing and insert rotor assembly.
8. Put in the four screws holding the seal plate.
9. Confirm that the rotor turns freely and that endplay is minimal. If the latter is excessive, take up with a half-inch washer between the pinion and the bearing.
9. Mate up the stator to the nosepiece and do up the eight setscrews.
10. Grease the endplate bearing, mate it up to the stator and tighten the four setscrews while making sure that the rotor turns freely and with minimal endplay.
11. Insert brushes, each in its own holder, and make connections.
12. Mount firmly in vise and connect the positive of a 12V battery to the terminal marked 'A' in Fig.1. Draw a deep breath and touch the stator with the battery negative. There exist three possibilities:

    (a) Nothing happens. This means either that the circuit is not complete or that the battery is flat.

    (b) Massive sparking occurs but no motion. This indicates that something nasty is in the woodshed e.g. a short-circuit.

    (c) Massive sparking occurs and is accompanied by rapid acceleration of the rotor and violent motion of the pinion in the direction of the outrigger bearing. If this does not make you happy, nothing will.

Peter Black
14.March,1989
Technical Editor
A.O.C. (U.K.) Bulletin



"It wouldn't have happened,dear, if we had bought the 12/50 Alvis with 4-wheel brakes."

ACCV N/L 11/89 p.10.

THE ALVIS INTERSTATE RALLY.

Over the years Interstate Rally attendances have grown not only in numbers of people and cars attending but in distances travelled to get to the venue. From 1972 at Holbrook with 18 cars mainly from Victoria and New South Wales and a couple from South Australia - to 1989 in the Blue Mountains with a total of 55 entries. And in that number we had 6 from South Australia, an equal number from Queensland and 1 from Western Australia.

In order to give all Australian Alvis owners the opportunity to participate in the 1991 Rally, Eric Cunningham has kindly made available the results of his years of research into ownership and locations of Alvis cars in every state.

To get an update on this information I have broken the listings into States and sent each list to an active Club member in each State requesting assistance to find out the latest on ownership.

My first return has come back from Dean Prangley in Queensland who has done a first rate job - and most surprisingly lists no fewer than 31 Alvis cars and owners in his State.

Dean and some of his closer Alvis friends are very keen to stage a Rally in Queensland in 1992 and that's great news. Who knows, but after that, Tasmania or even Western Australia may be the place to go.

So with such an Australia wide interest present and seeming to increase in the future and at some personal risk from traditionalists I'm changing the title from "Interstate Rally" to "National Rally". So 1991 will herald "The Alvis National Rally 1991" which title I feel embraces the whole Alvis scene in this country.

In planning for 1991, all Victorian venues were investigated that could hold the interest of members for 5 days and the one place that came out on top was ECHUCA. This historic town has a lot to offer as well as being well situated for activities outside the city limits. But ECHUCA does not have suitable accommodation with the services that are required for such an event so we'll be going across the river for sleeping and meals to MOAMA. We have booked a 5 star motel that has excellent convention facilities as well as 2 tennis courts and 3 swimming pools. One of the best things is that we have accepted a package deal that should ensure costs for the whole Rally will - in 1991 - be no greater than that of the Blue Mountains this year. And that's very important because steeply rising prices could blow out the entire Rally concept.

So now you know where the National will be held - and when - and all it needs is you.

A lot of the planning has been done - there's a lot more to be done and I'll keep you posted with developments in the months to come.

RON WILSON.

Wasn't it beaut to see the contributions from John Mitchell and Dean Prangley in the October Newsletter!

R.G.

FONDLING (continued) BY HORRIE MORGAN.

If the king pin has static negative camber, the opposite to the above must occur, giving increased negative camber at lock to lock points. If the king pins have positive caster the outside front wheel will describe a rising path and increase static positive camber.
The inside wheel axle will describe a falling characteristic and give the wheel a negative camber.

These are not the most desirable attitudes for cornerning, and explain why a lot of manufacturers are interested in negatively inclined caster; especially in front wheel drive cars, to improve understeering traits.

So you could juggle with Ackerman, caster and camber in order to delay the breakaway point when cornering, and when breakaway occurs you would like it to be neutral, both ends at the same time, but what about the design of the car that gave you unequal moment of Polar Inertia? Too much weight at front or rear? In case you have lost or did not read the earlier articles, it might be best to recap on why Ackerman, caster and camber have to be tuned to the characteristics of the car. The correct Ackerman angle between the front wheels is required so that when the inner front wheel loses its steering dominance (which occurs at the apex of the curve due to body roll and weight transfer) the outer wheel is at the correct angle to continue steering on the chosen entry path.

Caster gives straight ahead stability, but positive caster requires that the outside body is lifted upwards and increases steering effort. From this it also produces self centering. Camber decides wheel adhesion. Positive camber tends to negate the effect of positive offset and due to the body raising effect gives self centering and a degree of straight line stability.

So you can work to improve adhesion at the breakaway end by doing something positive like using anti roll bars to transfer some of the outside weight transfer back to the inner wheels. There are some cars however that are so unbalanced that when everything positive has been done they are still so end conscious that something negative has to be undertaken, such as anti- Ackerman to destroy front wheel adhesion and promote some understeer.

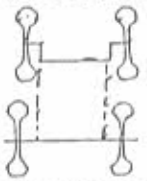
Ackerman dimensions. In the past when someone invented something it was unusual to give their name to the device or principle, i.e. Murphy's Law, but American text books have a habit of removing the name, especially if the inventor was not American e.g. Marconi aerials became unipoles, and Hertz aerials became dipoles, but they still refer to Edison Screw Lamp sockets. Therefore one cannot expect Ackerman or Jentaud to have escaped, so it becomes "increasing toe out on turns". The degree of Ackerman effect becomes a question of how much the toe out increases as the front wheels depart from the straight ahead position, and how to measure that effect.

(continued.....

ACCV N/L 11/89 p.12.

Parallel Steering or Zero Ackerman.

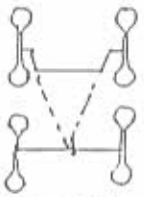
As a diagram relating to wheel base.



As a table.

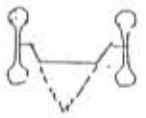
Inside Wheel	Outside Wheel
5	5
10	10
20	20

Classic Ackerman.

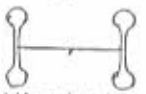


5	4	45'
10	9	30'
20	18	

Increased Ackerman.

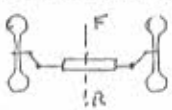


5	4	30'
10	9	
20	16	30'



Quite a few text books give the degree of Ackerman for sports cars as being ⅓ of wheel base from rear axle.

Adjustable Ackerman. This term had me worried as I could not imagine a mechanic going out with a blow torch and a hammer and adjusting the steering arms to another angle. However further searching showed that this was possible on sports racing cars with rack and pinion steering.



If the steering box is aligned with the steering knuckles the amount of Ackerman is decided by the angle of the steering arms as described previously. Shift the box rearward and Ackerman decreases and approaches parallel steering, moving the box forward increases the Ackerman effect.

Here I would like to refer you back to the Jentaud method of obtaining increasing toe out on turns, by using the Lavenir concave pentagon. This has been used in modern times e.g. in Rovers, 3 litre Alvis etc, but has been called idler of slave spindles. There are a lot of people urging vintage cars upwards, onwards and ever faster, who might like to try out the adjustable Lavenir method using the idler box from the 3 litre, mounted so that it can be adjusted to find the best Ackerman angle to allow one corner with con brio.

Slip angle. This was one of the many terms about which I found I had erred. My concept of slip angle was the angle created between the direction the front wheel was pointing compared to the centre line of the chassis. I started to have doubts about this concept when a quite heavy tome produced this paragraph, "Wheel adhesion increases as slip angle increases right up to the point of breakaway".

HORRIE MORGAN.