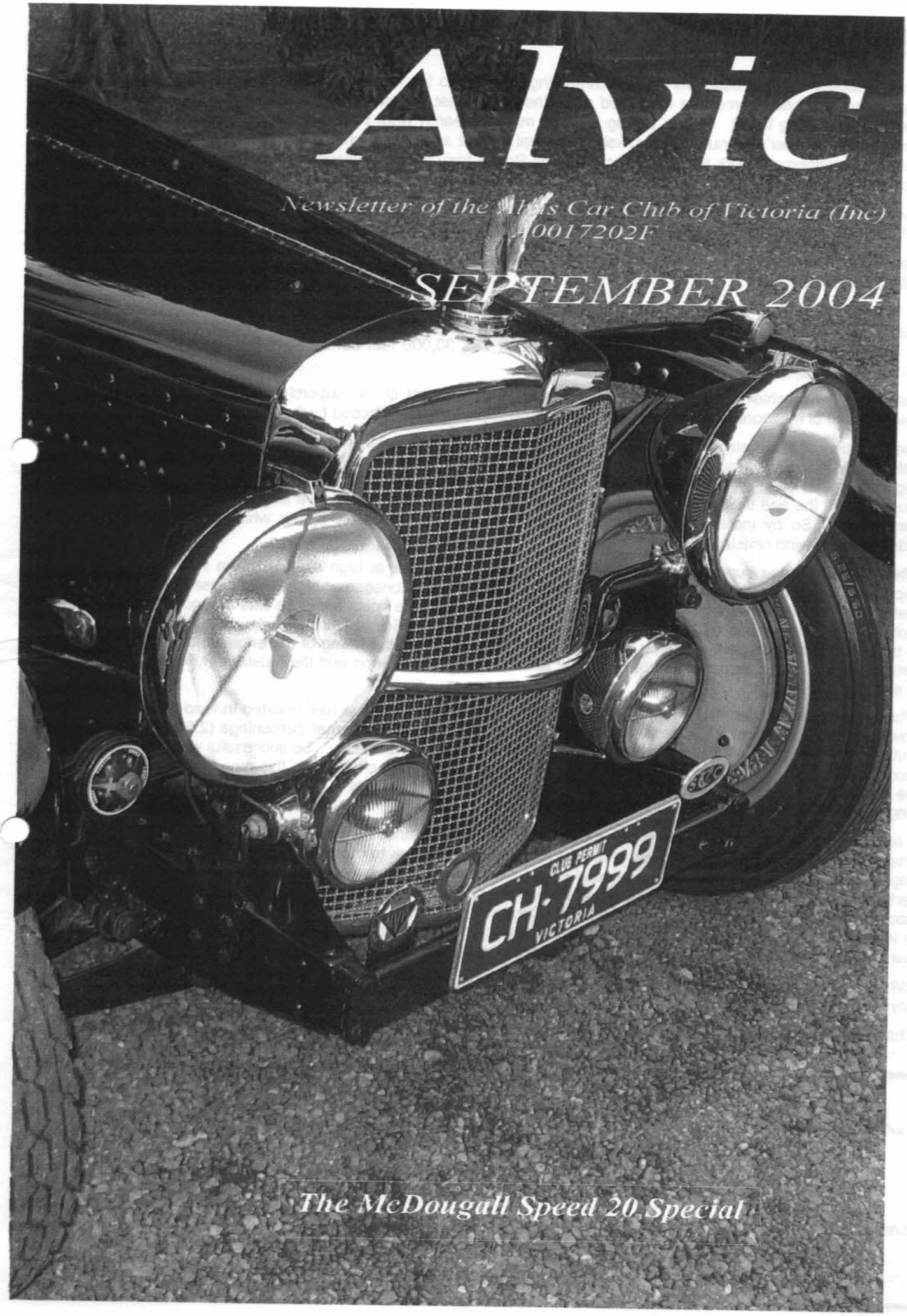
Alvic

Newsletter of the Alvis Car Club of Victoria (Inc)
A0017202F

SEPTEMBER 2004



The McDougall Speed 20 Special

Alvalacrity

I have recently had the delightful task of immersing myself into the depths and canyons of a Type 34 Merlin aero engine that has been somewhat neglected since the days it last saw service in a MKV Spitfire defending the skies over Darwin during WW2. Before pulling it apart, much research work was undertaken, in particular reading the comprehensive fitter's manual and workshop manual. As a side issue what really come home to roost was the constant development work that took place at Rolls-Royce from initial development, right through to the last model Merlin made.

Some 52 Marks of Merlin engine were developed during the war, which equated to a total of 150,000 engines made at Rolls-Royce Derby, Crewe, Glasgow, Packard's and the Ford Motor Company.

Merlin engine development went on day and night and if one was to sit down and study the Merlin history, interesting patterns soon develop.

In 1939 for example a Merlin engine would produce 1,000 H.P and have a speed of 340 miles per hour. By 1944, Merlins were producing 2,100 H.P with a flying speed in excess of 420 miles per hour. Altitude went the same way. In 1939 the height attained in 10 minutes from take off was 30,000 feet but by 1944 this figure grew by a further 10,000 feet.

The above was achieved through three main areas; improvement of the supercharger, improved fuels, and the development of mechanical features to take care of the improvements afforded by the other two.

The adoption of a two stage supercharger over the early single stage supercharged Merlin engines had not only a distinct advantage in terms of greater horsepower, it also had a huge impact on weight savings. A Merlin stage two engine weighed roughly 1660 lbs, whilst a single stage Merlin scaled up to give the same horsepower weighed roughly 3050 lbs and the frontal area of a stage two engine was 33% less than a single stage engine of the same horsepower. So by increasing horsepower, engines became considerably lighter whilst frontal areas could be reduced to aid wind resistance.

Whilst the two stage supercharger looked after engine performance at high altitude, there was also demand for improved performance at low altitude, the main culprit being fuel detonation at high boost pressure. It was obvious that better fuels were required than the 100 octane fuel used. A safe boost pressure was around 20 lbs per square inch. The addition of Tetra Ethyl Lead (6.5cc) T.E.L/ gallon over the 5cc of T.E.L already in the fuel saw an increase in boost to 25 lbs with a safe margin for detonation. This increased the rating of the engine substantially, which in turn increased the performance of the Spitfire at sea level by about 30mph and the Mustang P.51B to over 400mph at sea level.

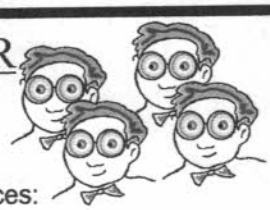
Whilst the figures looked encouraging, the amount of additional lead in the fuel resulted in lead fouling during low power cruising conditions. The problem was solved by doing tests using a small percentage (2.5%) of mono methyl aniline to 100 octane fuel which increased the fuels knock rating considerably. So successful were the tests that in next to no time all of fighter command and later US fighter aircraft had changed to this new fuel. A mixture of both the new fuel and water injection enhanced boost even more, particularly at a time when Germany had launched its long range flying bomb.

It is all very well developing power but maintaining reliability is another issue and reliability couldn't be gauged properly "in service". "Overload" tests were developed on each Mark to measure the strengths and weaknesses of engines over long time frames. Experimental engines were test run for hundreds upon hundreds of hours and when parts failed, they were replaced with new parts whilst the broken parts were either repaired, modified or re-designed. Each engine had to complete 100 hours testing. Common problems on various Marks manufactured were the need to increase bearing surfaces, lubrication problems and cylinder head cracking particularly around core plugs. This last problem was solved in later Marks by doing away completely with the core plugs.

"What's all this got to do with the Alvis Car Club" I hear you say, well not a lot, but I thought you may be interested anyway.

Chester McKaige.

DAY RUN TO YARINGA HARBOUR



We need more starters!

The following are going and we would like to see more faces:

Langs, McKaiges, Hetheringtons, Parkinsons, Tonkins, McKinnons, Caldwells, Whites, Parsells, Higgins,
Anyone else wishing to attend please contact Chester McKaige on 0407113516 or 95571134 after hours.

THE ALVIS CAR CLUB OF VICTORIA (Inc)

A0017202F

VOLUME 43

NEWSLETTER

ISSUE 8

September 2004

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SUPPER
The Links

Welcome to New Member
Walter Crook from Wales (U.K.)
Will be joining us on the 2005 National Rally.
We look forward to meeting you.

17 Sep	General Meeting
15 Oct	Annual General Meeting
17 Oct	Day Run to **Yaringa Harbour,** Sommerville Meeting at Park Golf Club, Melways ref Map 60 J3 Time 8.30 for 9.00am Morning Tea at Berwick Old Cheese Factory Devonshire Teas. Cost $6.60 per person Lunch Yaringa Café at the Yaringa Marina, Sommerville. Chester McKaige—organiser
14 Nov	Geelong Sprints—**CANCELLED**
19 Nov	General Meeting
21 Nov	Wings & Wheels—Lilydale—11.00am Melways 274 J11 ACCV space for 10 cars. Chester McKaige organiser
5 Dec	Xmas Party at the Parkies

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LETTERS TO THE EDITOR

Dear John
I feel I must put pen to paper in regard to the comments made about the newsletter at the last club meeting. I for one enjoy receiving the newsletter on a monthly basis and feel it would be a great shame to see it reduced to a bi-monthly publication.

It is a well known fact that the newsletter of any club is only as good as the number of members who contribute, so if only three or four people in a club of one hundred & fifteen members contribute on an irregular basis then the content of the newsletter, no matter whether it is monthly or bi-monthly, will be very poor indeed.

This to me is the situation that we now find ourselves in.

At the last meeting I overheard a conversation in which one member asked another where he could locate a component for his 12/50. The response was that you could adapt one from an ABC and by machining this and filing that, the modified component would do the job. This to me sounded like good advice, and it is information like this that should be sent to the newsletter editor for inclusion..

We in our club are blessed with a number of members who have been involved with Alvises for many years and certainly could pass on their experiences to others through the pages of the newsletter, but I guess that when push comes to shove there is always some sort of excuse, the most typical ones being, "I haven't got time", or "I'm not good with words". Feeble excuses really when you count the number of retired gentlemen who gather for our meetings every month.

With the ingress of cars now coming into the club, there is no excuse for the owners of these cars not to write about them for inclusion in the newsletter. Five cars come to mind and there are at least two or three undergoing restoration that would make great reading, so those who know who they are, please give it a go, it won't take all that long to do, really.

So with this in mind, it would seem that comments made at the last meeting were merely a blip on the radar and with all of you now making contributions, we look forward to the continuation of a newsletter filled with interesting stories, anecdotes, technical articles and tips and hints. I look forward to it.

Chester McKaige.

Letter to the Editor

FROM THE **CARS** OF THE PRE WAR SECTION OF THE ACCV

To all those underprivileged humans who look after Post war cars but are contemplating stepping over the line to the more desirable prewar section, **BE WARNED**, we are not amused by the grievous harm bought upon one of our poor unsuspecting brethren (a defenseless SA Speed 20) who found itself in the home of an adventurous noddy car owner. We do, of course, also have some sympathy for our later brothers who obviously must put up with such treatment on a regular basis. We realize we must allow the custodians of later cars to spread their wings but after the recent abuse meted out we must insist that any future prospective minder be carefully vetted prior to obtaining permission to provide a home for such a precious item. Fortunately no lasting harm has occurred as a very skilled artisan has been able to repair the 4 inch hole in the lower part of the victim's heart. I am sure that the said human will be much more careful next time he raises his new companion to explore its wondrous beauty.

Ed note....(if this is too cryptic for anyone, Parky was the villain, the correspondent shall remain nameless but his initials are DP)

Re: SA All British Day

Hallo John,
I have just had the day of this event up here on 13th Feb 2005. at Uraidla.
We have the choice of putting our car on the stand of the Austin 7SA club as we are members and they are a good crowd. If we go as members of another club, we get put with any other "odds and ends" from small clubs. I wondered if, via the newsletter,I could ask if there any ALVIC members who might be interested in attending as a group. Some like John Mitchell are in the Sporting Car Club. Anyway, if any are going, it would be nice to get the "quality" together. I am hoping to take both cars.
Best regards,
Mike

Stuart Macdonald.
I spoke to Stuart the day he came out of hospital having had a successful knee replacement. He was tired but well and will soon be kicking the footy and passes on his greetings to you all.

JL

John White advises that if anyone is at a loose end on Sunday 19th September they may be interested in the following:

SPRING SOCIAL TOUR AND ECONOMY RUN

Approx 100km—2 hour tour

- Very enjoyable winding country roads
- Magnificent views for passengers
- Simple navigation
- A3 map supplied

Starts: 9.30am at McDonalds Wantirna
10.00am departure
Finish: Yarra Glen for light Café lunch
Ring Elaine Roberts: Ph: 9801 1519 or 0407 822 455

THE DESIGN AND DEVELOPMENT OF A SPECIALIST MOTOR CAR.

Portion of an address given by the Chairman of the Automobile Division of the Institute of Mechanical Engineers, Captain G. T. Smith-Clarke, M.I.Mech. E.

Looking back thirty years, I think that on the whole the automobile industry benefited by its war-time experience. True, the period was largely wasted, so far as automobile design and development was concerned, and most of the firms had to resume production of pre-war models, but new methods for large-scale production had been established, working to standards of precision never before attempted. Knowledge of materials and the processing of them had vastly improved, and the status of the automobile imdustry was firmly established in our national economy.

The firm with which I have been connected for the last twenty-five years was founded in 1919 by the late T. G. John, and his objective was to produce a car which, while small in size and powered by an engine of only 12 H.P. R.A.C. rating, should be so designed, and produced to such engineering standards, as to be equal or superior to anything then available.

Truly an ambitious project.

When I joined the Company it was just beginning to produce a medium-sized chassis fitted with a four-cylinder, side-valve engine. The R.A.C. rating was 12 h.p., the capacity about 1,600 cu. cm., and the actual power output was about 40 b.h.p. at 4,000 r.p.m. Fitted with fairly light coachwork, the complete car had a very good performance; its comfortable cruising speed was around 50 m.p.h. and its maximum about 60 m.p.h., which was quite a lot in advance of contemporary cars in its class.

It was soon realized that if we were to hold our own in the specialist car class, something much better had to be developed, and for the Motor Show of 1922 an almost entirely new chassis was produced. The engine, 1,500 cu. cm. in capacity, had push-rod overhead valves, and by careful attention to combustion chamber shape, inlet and exhaust passages, and to the cooling of the valve seats and guides, use of a fairly high compression-ratio was made possible and the power obtained was about 60 b.h.p.

Particular attention was given to frame rigidity and to the suspension, to provide good road holding at high speeds on road and track. An inverted cone clutch was used, and the four-speed gearbox was built as a separate unit with an integral gate-change. A full-floating live axle was fitted, the novel feature of which was that the central portion was an aluminium casting with nickel-chromium tubes inserted to carry the bending and torsional loads. A slightly modified edition of this chassis, fitted with a streamlined racing body, won the Junior Car Club 200-mile race at Brooklands in November 1923, at an average speed of 93·29 m.p.h. This speed was a new class record for the distance (Fig. 19, Plate 4).

This was the basic design upon which all our cars have been built, and apart from some more or less special cars built in comparatively small numbers, originally for sports events and racing, a steady process of evolution took place, which culminated in the 25-h.p. car made in 1937 (Fig. 20, Plate 4). I cannot tell the whole story of this period of development and progress, and I shall only mention some of the things which I consider to have been of outstanding importance.

Frame rigidity and the provision of springs with correct ratio of periodicity front to rear were always considered of vital importance, but we did not at first realize that vertical strength, torsional rigidity, and good suspension are not the only things which make for good road holding; subsequent experiments with independent springing on all four wheels brought to light the necessity for maintaining the lateral position of the rear axle and wheels in relation to the frame. It is interesting to note that early cars made by Messrs. Arrol Johnson of Dumfries had a link arrangement to ensure this condition, and nearly thirty years later the very latest Mercédés chassis shown at the Motor Show of 1938 also had an arrangement to prevent the axle moving sideways.

As regards automobile engines of high power output, my experience has emphasized that certain design features are of the utmost importance if the engine is to prove satisfactory in the hands of the average owner. Many and various shapes of combustion head have been tried out and discarded, and I would say that for maximum power output, irrespective of all other considerations, the hemispherical head with two valves set at approximately 90 deg. to the centre-line of the cylinder, operated by two overhead camshafts, is far and away ahead of all others, but for normal use on the road such a construction is unnecessarily elaborate and is not particularly efficient except on full or nearly full throttle.

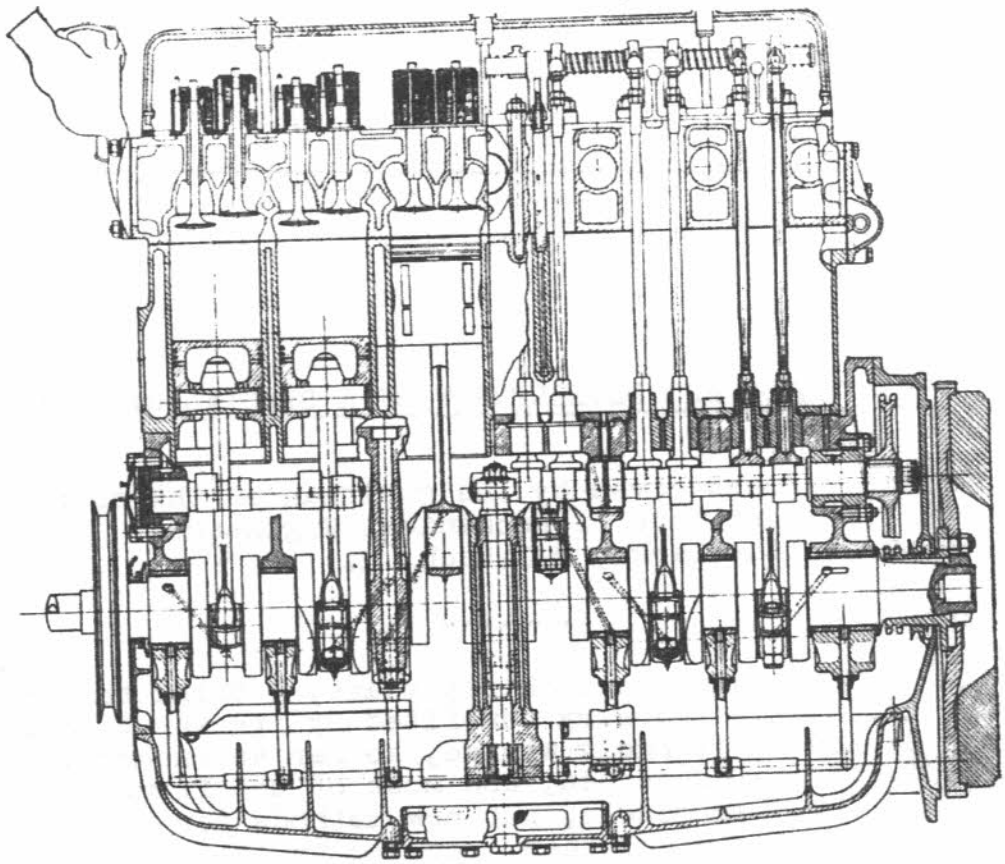


Fig. 21. Alvis 3·5-litre Engine, 1936

We have generally concentrated on some form of lozenge-shaped combustion chamber with overhead valves on the centre-line of the cylinder, operated by carefully-designed push rods from a single camshaft. This has given very general satisfaction and is, I believe, the best compromise even to-day (Figs. 21 and 22).

Cooling of the valve seatings and valve guides is of the greatest possible importance, and under no circumstances should any substantial portion of the exhaust-valve guide be allowed to project into the valve chamber. It is preferable even to increase the exhaust gas velocity at this point, rather than to leave the valve guide inadequately cooled.

NOTICE OF ANNUAL GENERAL MEETING AND ELECTION OF OFFICE BEARERS

The Annual general Meeting of The Alvis Car Club, Victoria will take place on 15/10/2004 at which time all committee positions will be declared vacant and the Election of Office Bearers for the year 2004/2005 will take place as will voting on the changes to the constitution, as printed in the June issue of the clubs newsletter.

Nominations for positions on the committee must be received in writing no later than 8/10/2004, using the form below. Nominations may be called for on the night for those positions which remain vacant. Positions which receive more than one nomination will be decided by a formal vote at the AGM. Proxy votes may be forwarded to the Secretary (Note, only Full Members are eligible to vote or hold committee positions).

I ..... nominate for the

position of : (please tick appropriate box below,)

- ❑ President
- ❑ Vice President
- ❑ Secretary
- ❑ Treasurer
- ❑ Spares Registrar
- ❑ Editor
- ❑ Club Captain
- ❑ Committee Member (up to 4 positions)

on this the ..... Day of..... 2004

Proposed By .....
Signature.....

Seconded By.....Signature.....

Nominee's Signature.....

Note only one nomination per form.

Valve springs have been a constant source of trouble in high-performance engines running up to speeds in the neighbourhood of 4,500 r.p.m. To-day, by reason of the improved technique in the preparing and drawing of the wire from which the springs are made, it is just possible to obtain satisfactory life from the normal type of spring, but to meet the conditions imposed in countries where a car can be driven at high speeds over long distances, we found it necessary to use a multiple spring which was originally developed for use on Packard aero-engines. This consisted of nine small springs arranged around the valve stem in a cluster. Originally they were made from ordinary piano wire without any further heat treatment after coiling. They had a very high natural frequency, and, as they were unaffected by oxidizing or other troubles due to heat treatment, there were practically no failures, and most of the troubles associated with defective valve springs appear to have been overcome by this design.

We fitted a polar-inductor magneto of aircraft type and experienced practically no ignition troubles. At one period we used an arrangement with a change-over switch, so that the engine could be started on what was the equivalent of coil ignition, changing over to the magneto when the engine had been started. It was, however, found that with a high-class magneto this arrangement was unnecessary. I have been very sorry indeed to see that the automobile industry has, mainly because of cost, gone over almost entirely to coil ignition. Personally I regard this as a major error because, with the enormous improvements which have been made in magnet production, I feel that, had the industry demanded it, an efficient magneto not much larger than the present-day distributor head, could have been produced, probably at a price comparable with that of a really good coil-ignition system, and the superiority of a good magneto, over the very best coil-ignition system possible, will not, I think, be questioned.

The design of the oil pump and the sump play a great part in the high-performance engine, and even now it is not always realized that it is not only a question of adequate lubrication but the amount of oil circulated for the cooling of the bearings and the pistons which is really important. The practice of restricting the oil flow by very carefully controlling the big-end side clearance is, in my opinion, quite wrong. For piston cooling it is hardly possible to circulate too much oil, and the problem of keeping it inside the pistons (and not in the combustion chamber) must be solved by accurate design of the piston, piston rings, and scraper rings, and by the use of cylinder materials which give adequate life of the cylinder bores.

Camshaft timing gears have always been one of the automobile engineer's headaches, and the use of six and eight cylinders in a high-performance engine accentuated the troubles. After much experimental work it was decided that the only satisfactory position for the camshaft and accessory drive was at the rear end of the engine, as close as possible to the flywheel. The evolution of a suitable scheme was not an easy one, but eventually this was achieved, and from 1926 until the end of 1937 all our cars were fitted with rear-end camshaft drive employing a duplex roller chain with an automatic tensioner.

In 1924 it was decided to experiment with flexible engine mountings. At first we mounted the engine and the gearbox normally, but with rubber cones to insulate them from the rest of the chassis. In 1924 we tried out a three-point mounting for the engine and gearbox unit used in one of our racing cars. This mounting had two bearings forward of the centre-line of the engine, and as high as possible, the third mounting being at the rear end of the gearbox, and, with variations in detail design, we have used this form of mounting continuously from that time.

For some years modifications in gearbox design were largely confined to increasing gearcase and gearshaft rigidity, to improving the disposition and quality of bearings and in the production of better gears, but around 1930 it was realized that the crash type of gearbox had had its day, and investigation was carried out into various forms of clutch engagement and of methods of synchronizing gear-tooth speeds before engagement. In 1933 we decided to take a licence from General Motors, Ltd., of America, for one of their synchro-mesh patents which we considered to be superior to all the other types available, and it was decided that we would not be content with synchro-mesh on third and top only, but would have it on all four forward gears (Fig. 23). At first sight this seemed an almost impossible proposition, but, by splitting the gearbox on the axis of the main shaft, it was found possible to produce a four-speed synchro-mesh box which was not too difficult to manufacture and many years of continuous experience have supported this decision.

The propeller shaft was a real difficulty in the early days of the high-speed engine, and it was soon found that the fabric type of universal joint, which had given very satisfactory results with earlier engines, was not suitable for the very high stresses involved. Various types of universal joints were tried and eventually we designed one of our own which used Timken bearings throughout and which was adjustable to ensure that the shaft ran perfectly true after assembly. This was used continuously for many years and gave very satisfactory service.

Partly because of its inherent advantages, and partly because of my early experience, I have always been a great advocate of the fully floating type of rear axle, and the axles we used were of that type from 1922 to 1937. In our latest designs a single-piece aluminium-alloy casting formed the main beam of the axle. The

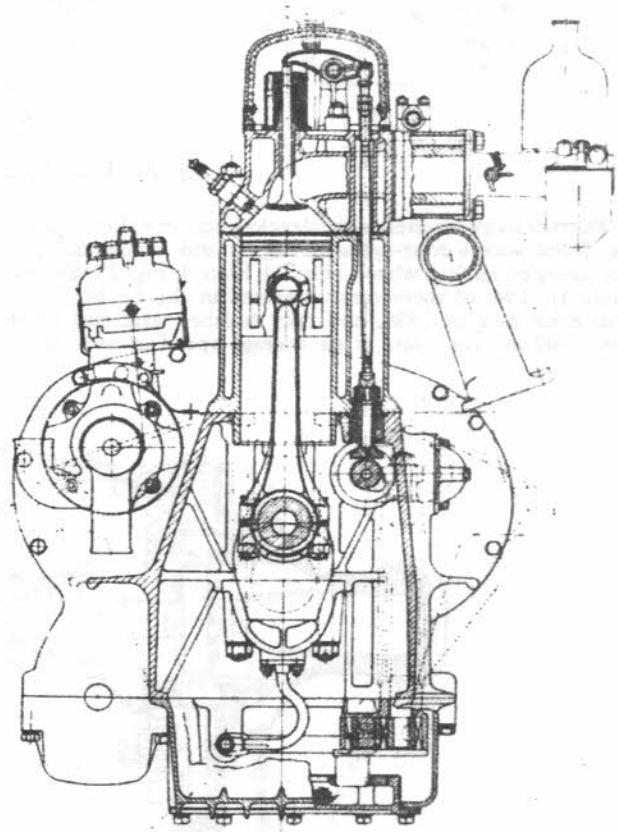


Fig. 22. Alvis 3·5-litre Engine, 1936

casting included the flanges for the attachment of the brake back-plates, and the locations for the rear suspension springs. Nickel-chromium steel tubes carried the wheel bearings and extended into the axle casting close up to the differential unit. These tubes took the major bending loads, and experience proved that the aluminium-alloy casting was able to withstand all the torsional stresses. The differential, together with the spiral bevel pinions, was detachable as a complete unit, and the axle driving shafts could be removed, leaving the car standing on its own wheels. This particular axle design was considered to be somewhat daring when we introduced it, but long experience has proved it to be entirely satisfactory.

From 1925 to 1930 a large amount of experimental work was done on front-wheel drive cars. The first F.W.D. car was intended solely for freak hill climbing and for sprint racing and, to satisfy the conditions imposed by this sort of work, aluminium alloys were used wherever possible in order to reduce the total weight. Even the main frame was made of duralumin.

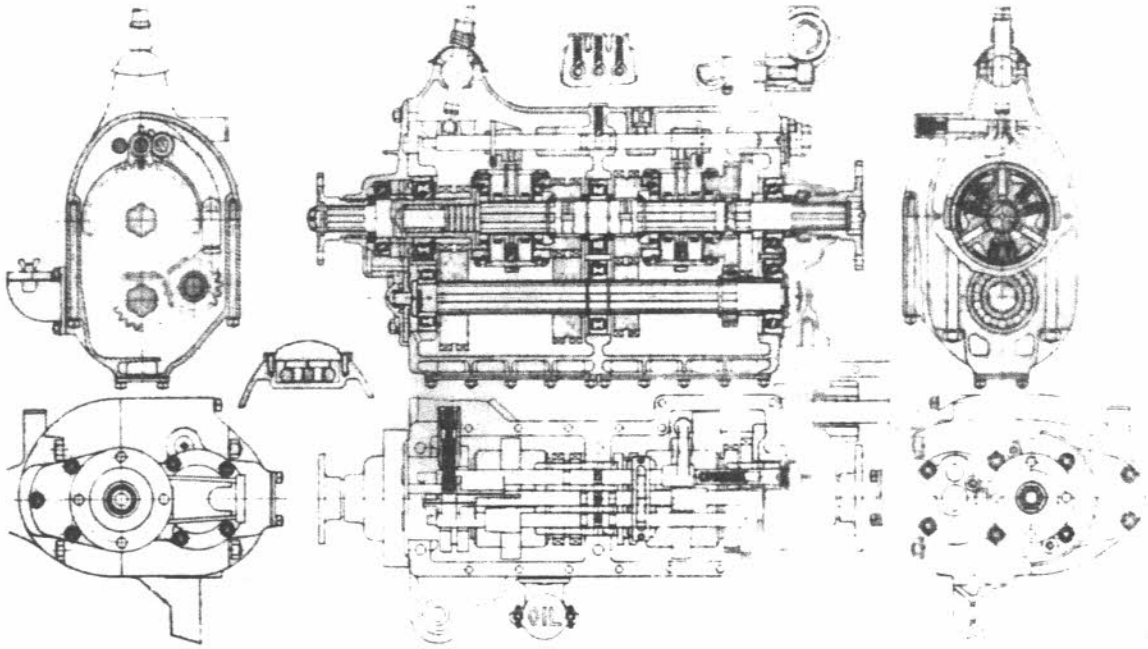


Fig. 23. Four-Speed, Synchro-mesh Gearbox, 1934

Further work resulted in the development of a front-wheel drive car fitted with a four-cylinder engine and having independent springing on all four wheels (Fig. 24, Plate 4, Fig. 25, and Fig. 26, Plate 4). Two of these cars competed in the Le Mans twenty-four-hour race in 1928, and they finished first and second in the 1,500 cu. cm. class at an average speed of over 60 m.p.h. for the twenty-four hours. Following this trial, about 250 of these care were produced and sold to the public. Some of these cars were fitted with the standard four-cylinder engine as used in the Le Mans race, and others were fitted with light semi-racing bodies and had a supercharger fitted to the engine. One of these cars finished second in the R.A.C. Tourist Trophy race

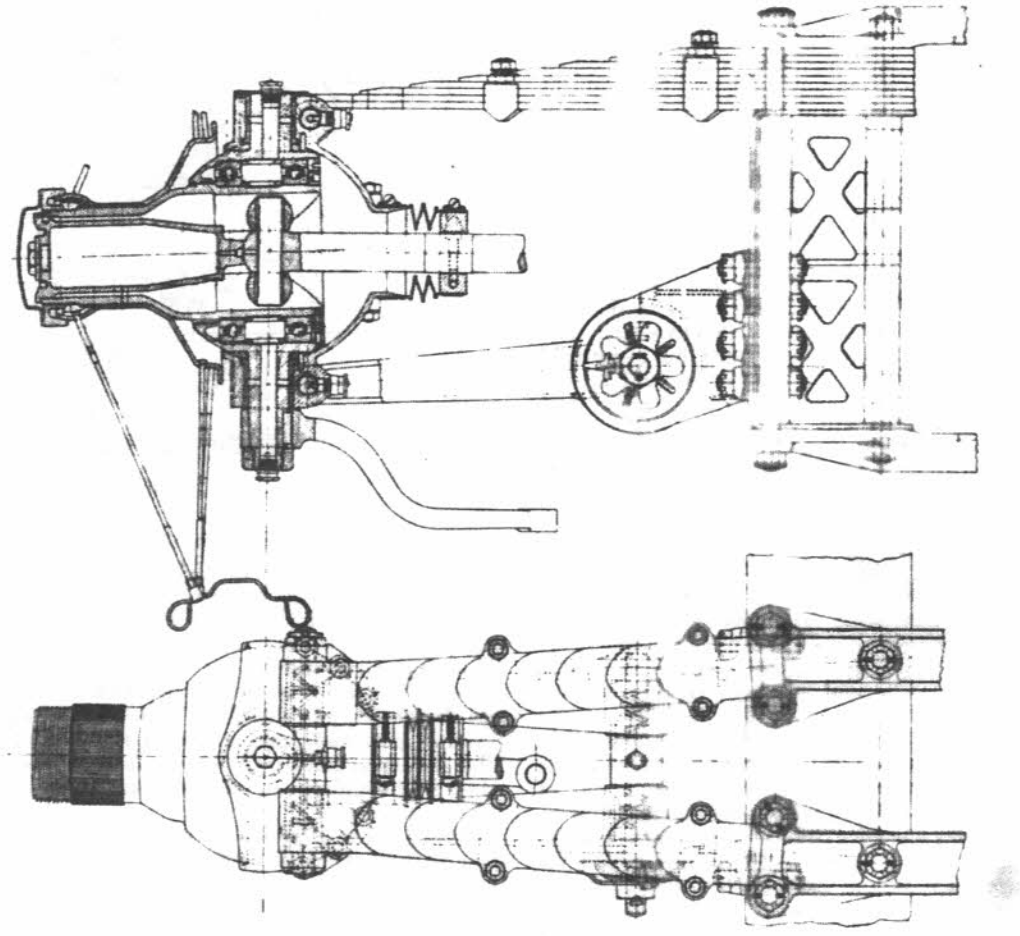


Fig. 25. Front-Wheel Drive and Suspension, 1928

which was held in Ulster in 1928, being only 13 seconds behind the winning car in a distance of some 500 miles. After nearly twenty years some of these cars are still in service in the hands of their private owners.

As a further development, three front-wheel drive cars were built specially for racing (Figs. 27 and 28, Plate 4). These were fitted with an eight-cylinder supercharged engine. From racing experience, a special eight-cylinder supercharged sports car was produced. Three of these cars were entered in the 1929 R.A.C. Ulster Tourist Trophy race and came in first, second, and third in the 1,500 cu. cm. class and were the first British cars to finish the race, following a team of three Italian cars of considerably greater capacity and representing the very last word in Italian racing car development of that time.

Largely as a result of all this racing work, it was decided to investigate the possibilities of using independent suspension on ordinary touring cars, and after a great deal of work we arrived at the conclusion that while independent springing for the front wheels offered some very considerable advantage, independent suspension on the rear wheels was not worth while and the results obtained did not warrant the additional complication involved. From 1933 onwards we fitted independent front-wheel suspension to all of our more expensive standard production cars (Fig. 29).

In 1937 we embarked upon a very big project for the production of air-cooled, radial aero-engines and from that time until the war of 1939–45 I was very fully occupied in the technical direction of this work.

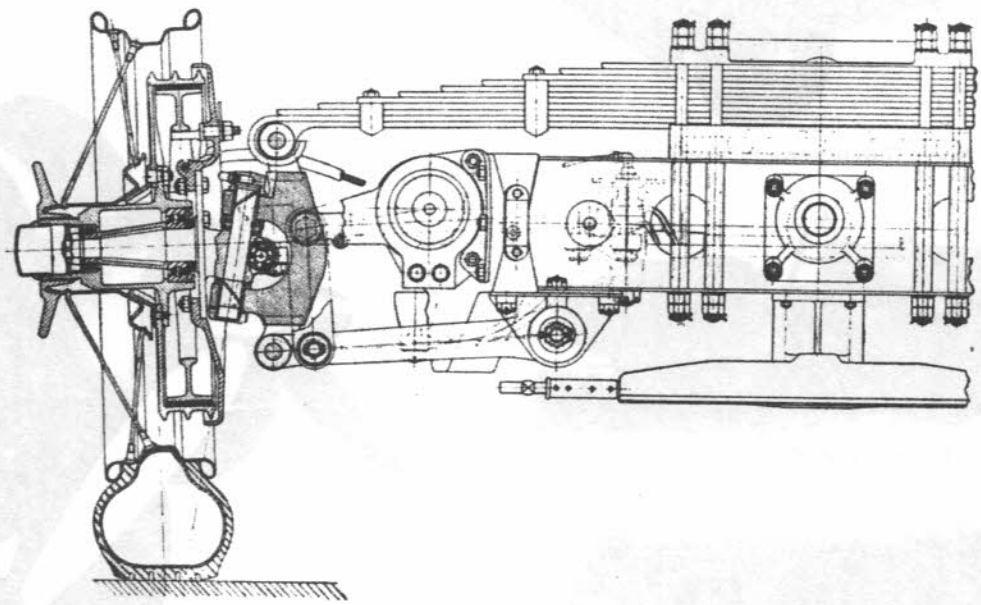


Fig. 29. Independent Front-Wheel Suspension
As fitted to Alvis cars, 1933–9.

THE 1939–45 WAR AND THE PERIOD FOLLOWING IT

When, towards the end of 1937, there were ominous signs of impending war, the position of the automobile industry was very different from that of 1914, and sufficient capacity was available to meet demands for road transport of all kinds. The capacity available for the manufacture of aeroplanes and aero-engines was, however, far too small to meet a war emergency, and once again the automobile industry was called in. "Shadow factories", built at government expense and controlled by some of the larger firms, were equipped for the production of both planes and engines, and a very large number of firms once again undertook the production of sub-components and details on a sub-contract basis.

We accepted sub-contracts for the manufacture of the hub components for variable-pitch propellers, and for Rolls-Royce Merlin components such as supercharger casings, airscrew shafts, connecting rods, rotor shafts, and various gears. Later we took on in addition the overhauling and testing of Rolls-Royce Kestrel and Merlin engines. We also built complete aircraft power plants fitted with Rolls-Royce Kestrel and Merlin engines.

In the great German air raid of 1940 our motor-car factory was completely destroyed, and from that time we were working in various dispersal factories found for us by the Ministry of Aircraft Production. We were also responsible for the planning, erection, and management of a shadow factory for the production of hub components for a later type of variable-pitch propeller.

Apart from one 2,000-lb. bomb on the toolroom, our aero-engine works sustained only minor damage, and at the end of the war all our resources were concentrated into these works, which are now producing aircraft power-plants fitted with the Leonides 500-b.h.p. engine (Fig. 30, Plate 4) and a 14-h.p. car (Fig. 31, Plate 4).

What of the future of our industry? We are told that we must export 75 per cent of our production if we are to survive, but what can we export? What cars do we make which are acceptable in the markets of the world? The problem is admittedly difficult but to my mind it can be solved if suitably approached. I sincerely believe there are markets throughout the world where British excellence in design and craftsmanship will sell in sufficient volume to meet our requirements.

In the past, owing to the incidence of taxation, the engines of British cars have been mainly of small capacity. It is true that the steady increase in power output per litre has been remarkable, but these small engines will never be acceptable to the car owner who has experienced the steady effortless power of the engine of three or four litres capacity.

I believe that, as quickly as is practically possible, we must have cars in the following classifications:—

(1) The compact family car of about the size of our present 10–12 h.p. models.

(2) A family car of about the size of our present 18–20 h.p. models.

In each class the chassis can be standard throughout, but alternative engines of 2–2½ litres and 3–4 litres should be available at customers' option.

(3) "Sports" cars having engines of 2½–3½ litres capacity. By sports cars I mean, not standard cars "hotted up" but cars and engines designed for the highest possible performance, coupled with trouble-free operation and reasonable life.

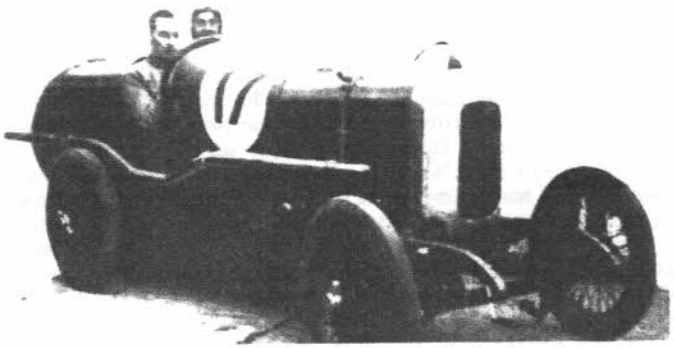


Fig. 19. Alvis Racing Car, Winner of the J.C.C. 200-mile Race, 1923

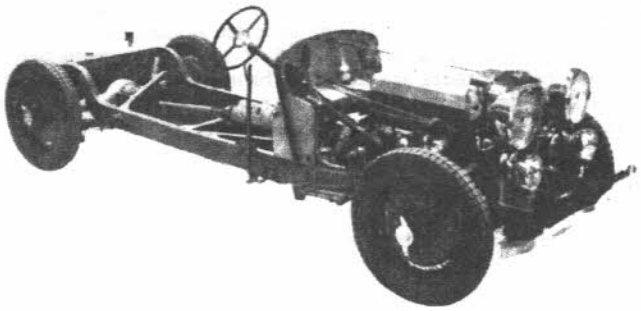


Fig. 20. Alvis "Speed Twenty-five" Chassis, 1935

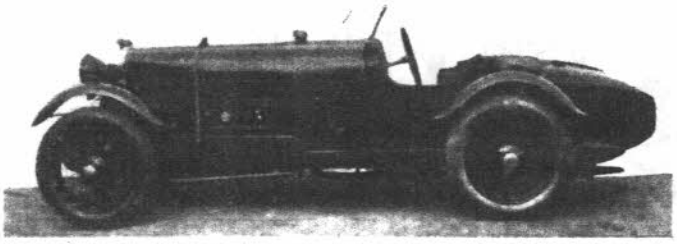


Fig. 24. Alvis Front-Wheel-Drive Car, 1928

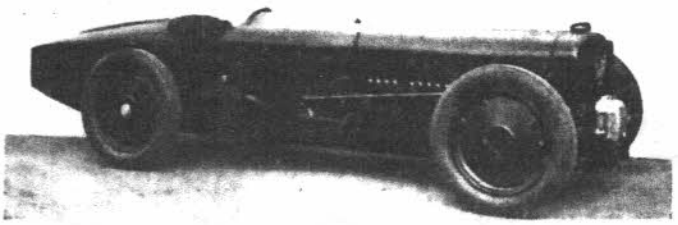


Fig. 27. Front-Wheel-Drive Racing Car, 1929
Eight-cylinder engine.

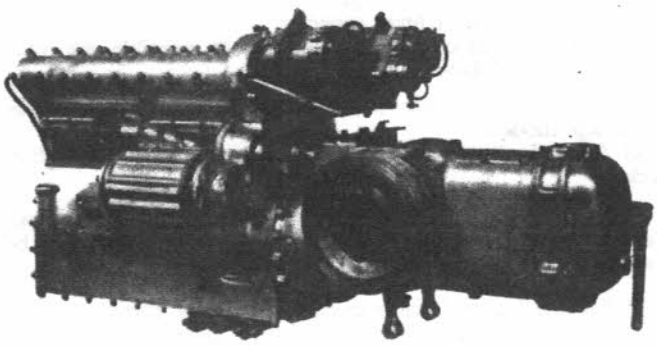


Fig. 28. Eight-cylinder Engine and Transmission Unit, 1929
[I.Mech.E., 1948]

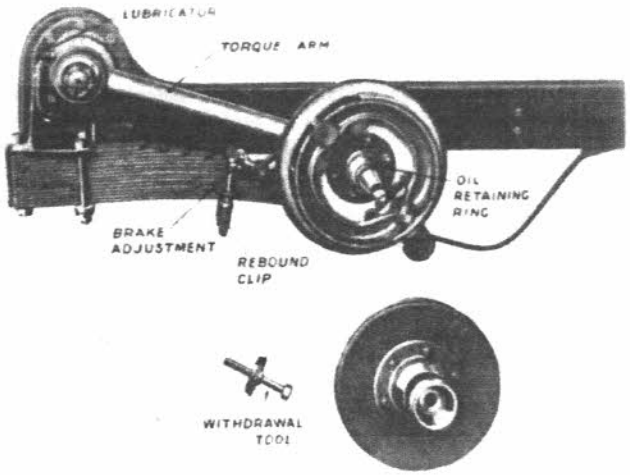


Fig. 26. Front-Wheel-Drive Car, Rear Suspension, 1928

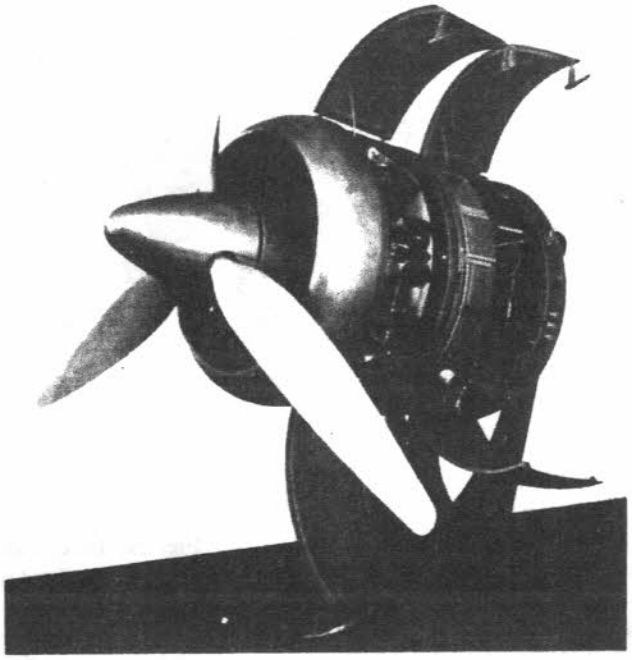


Fig. 30. Aircraft Power Plant fitted with Alvis Leonides 500-b.h.p. Engine, 1946

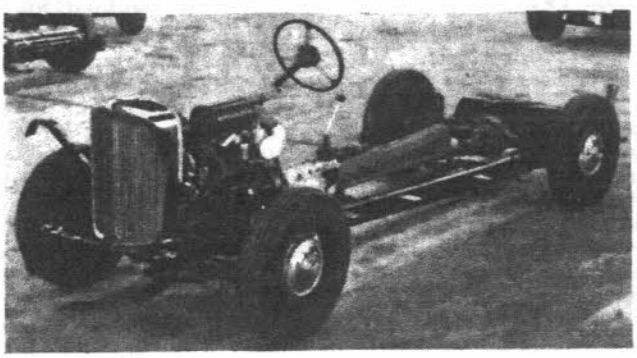


Fig. 31. Alvis Fourteen Chassis, 1946

With acknowledgement to the Institute of Mechanical Engineers Journal, David Head provides the following:

Union fears for Alvis jobs after firm goes for BAE's £355m bid

UNIONS are demanding urgent talks with Alvis officials, following the firm's acceptance of a dramatic eleventh hour cash offer from BAE Systems valued at £355 million.

BAE's offer for military vehicle maker Alvis trumped an earlier £309 million bid tabled by the US group General Dynamics.

As news of the BAE deal broke, trade union Amicus moved quickly to call for immediate meetings with Alvis management.

The union said that it was reacting to City concerns that BAE Systems may seek to recoup losses following its successful bid which, at 320p per share, was significantly higher than General Dynamics' 280p offer.

John Wall, Amicus' national secretary for aerospace, said: "We are optimistic that BAE Systems recognise that the success of Alvis is due to the commitment of its world class workforce. However, we note the value placed on shares by BAE Systems and hope that they do not intend to recoup the difference between the previous bid by GDC as this could mean job losses.

"We will be seeking an immediate meeting with management in order to discuss the meaning of the last-minute nature of the bid and to seek reassurances and safeguards for Alvis as an icon of the armoured vehicle market."

Commenting on the sale, Alvis chairman and chief executive Nicholas Prest said: "BAE Systems is a leading international defence contractor whose activities complement those of Alvis."

London-based Alvis employs about 2,800 people, including 1,100 at Leeds, Newcastle, Telford and Wolverhampton, making vehicles from battle tanks to armoured personnel carriers.

It began life as a car manufacturer in 1919 and now has operations in the UK, Scandinavia and South Africa. BAE Systems, which already owns 28.7% of Alvis, said the proposed deal would be "to the benefit of future MoD programmes and the UK armed forces".

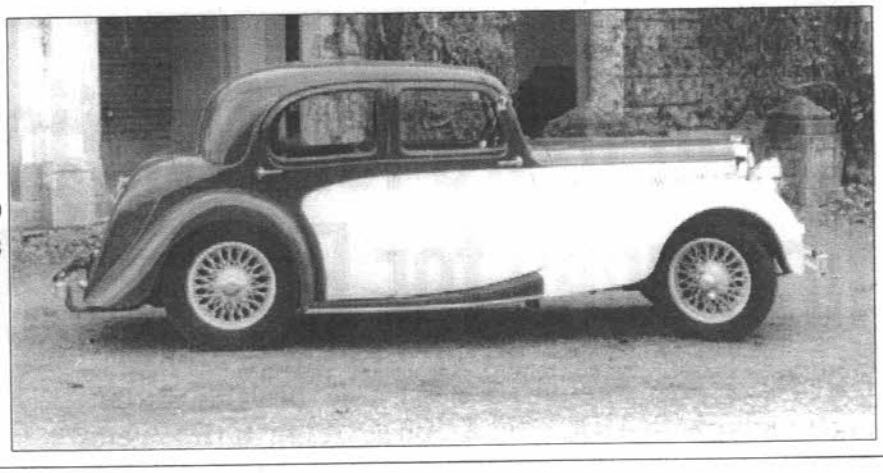
World class: Alvis, maker of the Warrior tank, will soon be under the BAE banner

SWAP, BEG, BORROW or STEAL

WANTED:
Information about ALVIS STALWART's in private ownership in Australia. A current owner would like to hear from other owners with a view to forming a Stalwart register (possibly within the ACCV, if the current members don't mind.) Please direct information to Dale Parsell, Secretary, ACCV.

FOR SALE:

1937 12/70 Alvis Sedan.
Grey and white. Mechanically checked over & in good order. New rings fitted. Fully registered, completely re-trimmed, re-painted and re-chromed. Under 1000 miles since work carried out. 12 months full Victorian registration
$38,000 ONO
and
Good petrol tank for a 12/50 $150
Contact Eric Nicholl (03) 9754 5412



FOR SALE:

TC 21 formerly owned by Barry Turner as featured in October 2003 Alvibatics. Rego ADD45V. Red over silver $20,000 ONO. Patricia Turner 02 6361 7739 or mob 0404 466 881

WANTED:

Differential centre carrier or any parts for a mid 30's six cylinder car. Crown wheel and pinion condition not important.

Dale Parsell Tel (03) 5968 5170
or dparsell@ozemail.com.au

WANTED:

SP 25 Hand Brake lever arm
Generator louvred band to cover brushes
2 x 1/2 Ball and wing nut as located on threaded brake rods
Pass light Glass--2 of
Gear Box mounting brackets--offside, nearside and rear
Likely, models other than the SP25 will share the componentry.
Cheers, Michael Lavender, NZ Alvis Club
Call Collect 0064 33255704 (New Zealand)

FOR SALE:

1928 Alvis SWB FWD supercharged. Car # 11982 Engine #7653 . Rolling chassis. Engine restored some years ago. Front splines worn. No Body, radiator surround or bonnet. Originally carried a Le Mans 2 seater.
$30,000
Call Graeme Cooke (03) 51271401

FOR SALE

ALVIS TD21 2-door saloon by Park Ward. Chassis & Engine # 25996. Body # 18025. One of 783 built. 11 in Australia. Car suitable for restoration, straight body, good interior, pretty polished woodwork. Very original. Factory extras include sun roof, front disc brakes, wire wheels, original radio. Engine, gearbox, radiator, brakes & tank not fitted but with car. A/H manual gearbox. Comes with new water items, extra 4 outstanding Alvis wire wheels and most history since day 1. Unfortunately, spinal problems dictate selling . Price $9500. Contact Robert Penn Bradley, phone (02) 6386 4348 or fax (02) 6386 4349

WANTED:

Pair Bosch 10 inch diameter Headlamps JG 240 or JG280 and a pair of Bosch side lamps J120.
Ring Geoff Hood (03) 9842 2181

WANTED:

Head light reflector for a 14.75
Eric Nicholl (03) 9754 5412

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John Lang .....ed