











VOLUME 30

ISSUE NO. 8

AUGUST 1991.

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 pm.

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

AUGUST. FRIDAY 16.8.91. AUCTION NIGHT. By the time you receive this Newsletter that date will have passed.

SEPTEMBER. FRIDAY 20.9.91. CLUB GENERAL MEETING.

SEPTEMBER. SATURDAY 28.9.91. G.N.O. AT THE HENDOS. Note change of date. Definitely the 28th. Details next Newsletter.

OCTOBER. 13.10.91. PUFFING BILLY OLDE TIME FESTIVAL. Ron Wilson has seven paid-up starters and two more promised. He has asked for the start to be at Pakenham and has been promised an area for the Club at Emerald Station.

OCTOBER. ANNUAL DINNER AT MALVERN GOLF CLUB. Details in next Newsletter.



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PRESIDENT'S MESSAGE

Fifty or sixty years ago, when Alvis was in it's heyday, it was quite pleasant driving an open sports car. (Or should that be sporting?). And this happy condition existed as recently as only 30 years ago. There was much less traffic on the road and a lot of fun could be had whilst driving an open car.

Today's road conditions are quite different, heavy traffic congests the roads, with a set of traffic lights about every 300 yards or quarter mile. Trucks by the million pour diesel fumes into an open car especially.

The general speed of traffic is now faster and more wind buffeting of the users of open cars is caused by the higher speed. If one wants to motor quickly these days, it is quite possible to do so in a modern saloon car, because of the muchimproved performance of this type of vehicle (and much more comfortably, too).

However, we still love our Alvis, and we use it as often as we can - even if it is as a hobby car to be driven at weekends only.

BOB GRAHAM.

A dent in their gleaming duco!

URS has been a passionale relationship. I love him. And he loves cars. He's had tempestuous affairs with a Mark II Jag. A Peugeot 403. A racy Fiat 124. Two Renaults and more. But our relationship continues to be passionately torrid because I love him. And I don't love cars. I couldn't care less how I get from A to B as long as I get there with me in one piece and most of the bits of

the car that were there at A.

He feels I demonstrate a totally irre-He rees I demonstrate a totally inte-sponsible and immature attitude to the care of paintwork, door panels, valour seat covers and brake linings. He also feels that I don't deserve to own, let alone drive, a motor vehicle worth any-thing more than a run-down four-seater hills each I wouldn't mind owning a ining more than a run-down four-seater billy cart. I wouldn't mind owning a four-seater billy cart. But, of course, he wouldn't push me about in it. So I own a car. A new car. And this is where we get to the torrid part of the relationship.

"I don't know how you do it," he says shaking his head in disgust. "You have just ruined \$5000 worth of paintwork". And he points out a dent I cannot see. He has obviously gone over the car with an electron microscope again. I finally spot the pinhead nick and spit on it and try to rub it off with my elbow. That doesn't work. But the dent isn't anything nail polish could fix.
"I just don't know how you do it," he

"I just don't know how you do it," he moans with a morbidity verging on despair. Funnily enough, I don't know how I do it either. The car gets these marks like people get wrinkles. They just happen with age.

The problem is that he's got allies. Millions of them. Almost the entire male population of Australia. They belong to this exclusive club. It's called the Secret Society for the Preservation

the Secret Society for the Preservation of Duco. You see them out on a Sunday By KERRY CUE

morning going through the ritual duco morning going through the ritual duco cleansing ceremony with their beloved cars. Amd these felias always look like a hungover William Hurt in thongs. But the duco looks great. They get together and swap stories about a wife's or girf-friend's callous disregard for duco. And they stand around shaking their back is grantly likewest.

heads in mutual disgust.

I have tried often enough to defend myself. "Look here," I've insisted. "You never take your car to the super-market, it's my car that gets savaged by car doors and maniac trolleys." "I go to the supermarket," he reckons. "I just park up the road where my duco

The problem is that he's got allies. Millions of them. Almost the entire male population of Australia.

won't get wrecked." That's rule No. 1 of won't get wrecked." That's rule No. 1 or the Secret Society for the Preservation of Duco. ALWAYS PARK THREE BLOCKS FROM THE SUPERMAR-KET. Naturally, it has never occurred to me to park three blocks from the supermarket while lugging one screaming child, 13 shopping bags and one wine cask to the car. I don't wish to one wine cask to the car. I don't want to be too sarcastic, but if you only have one pack of twin-blade razors to buy, parking three blocks from the super-market is not an issue. Is it?

My argument continues. "You never do the after-school whinge run when 300 cars converge on 10 metres of parking space and you leave with a car-load of whingers who can only be subdued by tossing doughnuts into the back seat." But that is only part of the probseat." But that is only part of the problem. It's the second rule of the Secret
Society for the Preservation of Duco
that sorts the children out. CHILDREN
ARE ONLY ALLOWED INTO THE
CAR ACCORDING TO RULES LAID
DOWN FOR THE TREATMENT OF
CHILDREN AT THE GENEVA CONJUNE OF THE TREATMENT OF
CHILDREN THE SECOND THE TREATMENT OF
CHILDREN THE SECOND THE TREATMENT OF
THE TREATMENT OF CHILDREN AT THE GENEVA CON-VENTION. They are marched to the car. They are frisked for chips before entering. They are transported in silence. And they are told if they touch anything, they will be shot. "Furthermore," I linsist, "you aever get pregnant." That's another rule for the Secret Society for the Preservation.

of Duco. And easy it is for them, I say.

of Duco. And easy it is for them, I say.
"How could you?" he muttered on
viewing the dent in my previous car.
"How could you back the front end of
the car into a lamp post?" It's easy
when you're pregnant. Or breast feeding. It's hormonal. You get pregnant
and your car won't fit into the old parkteer role.

ing spots.
"I don't believe it," he moaned. "You

"I don't believe it," he monned. "You have another great bloody dent in your car." This is the new car again. "Where?" I ask defiantly. "Underneath," he said looking at me as if I'd spent the day intentionally driving over land mines. I think the Secret Society for the Preservation of Duco needs another rule. Rule IA. FOR A HARMONIOUS LIFE, MEMBERS OF THE SOCIETY SHOULD ONLY FORM A LIAISON WITH, OR MARRY, OTHER MEMBERS. Then they'll get what they deserve. Pristine duco and a what they deserve. Pristine duco and a hairy bedmate.

ALVIS AGNITIONS.

Not much to report this month - well, there may be lots to report but your Editor hasn't heard it because he has been away. RON WILSON sent along a copy of "The Monthly Newsletter" of the Alvis Car Club of New Zealand. Ron makes the comment that he thought the Club was defunct. So did I but it is definitely dated July 1991 and the address is "Private Bag, Swanson, Auckland". The Editor also received, out of the blue, a copy of "Freewheeling" Monthly Bulletin of the Rover Owner's Club of New South Wales. That brought to mind a couple of shared outings that this club had with the Rover Club of Victoria a few years ago and there was also a shared event or two with the Riley Club. Is it worth considering such activities again? I know that an International Journal of such repute as the A.C.C.V. N/L pulls an almighty advertising punch - demonstrated yet again by the sale by Ron Wilson of his steering wheel on the day the Newsletter was published! RICHARD UNKLES supplied this month's steamroller cartoons and the Vintage Alvis Production Statistics.

ED.

THE MOTION PICTURE MEETING.

Fletcher's Fabulous Flicks attracted a full house for the July meeting with every seat taken. Members came from as far away as Glenroy, Murchison, Merricks and Christmas Hills to see a varied programme which started off with the Australian Grand Prix staged in 1957 at Albert Park. There was a top line cast including Stirling Moss, Doug Whiteford, Stan Jones and all the other greats.

This was followed by a tribute to Jim Clark which showed some fine driving but over stressed the obvious dangers of Formula One Racing, culminating in Clark's fatal crash at Hockenheim.

The last film was titled "Defensive Driving" with a husband and wife team pointing out driving errors to be avoided on the road. Filmed in Germany it became obvious the male lead was becoming increasingly defensive with his companion Frau who never stopped talking and criticizing his driving. Sadly the film ended before he threw her out of the car and the film programme ended with the usual animated nattering over supper.

Sadly too, the hour was late due to some lengthy waffling on by the Executive prior to the film show. But another good night with special thanks to Rex Roberts for arranging the films and to David Fletcher for the mechanics.

RON WILSON.

The following article originally appeared in "Alvic" in November 1962. I read it recently and was reminded of it during my own F.W.D. trip to the top of Cape York.

NOTES ON THE F.W.D. - BY HORRIE MORGAN.

Browsing through February "Motor Sport" I came upon some references to the F.W.D. No, not Alvis, but Four Wheel Drive.

As I drove one of these brutes for 6 months and suffered all the trials and tribulations of the damned my recollections are therefore far more vivid than the hazy meanderings of the Motor Sport scribes.

The F.W.D. was an American World War I disposal. That it had seen active service was proven, according to the local yokel, by a dent on the chassis "where a shell had hit". Personally, I always considered that the mark was proof that a demented driver had bashed his brains out.

The construction was solid. Solid rubber tyres. Solid cast iron wheels. 1/4 inch steel running boards, seat, engine covers etc.

The engine was a 4 cylinder Lycoming, and was positioned over the front diff., which put the crankshaft line about 4 feet above the ground. The only way to crank was to stand to the side with both hands on the handle and pull through 90 degrees. Then fall flat on your face as soon as possible - to avoid getting the handle full in the teeth on a backfire.

The writer who said the compression was so low that the engine could be turned over by the fan belt was nuts. The drag of the gear and transfer box was so heavy that when cranking it was necessary to use full strength to go over the firing point. The danger of back-fire was that one would run out of steam just about T.D.C., when the impulse starter would let go and it was anybody's bet which was the engine would revolve.

The engine was a side valve T head with a large unswept area so most of the heat went into the cooling system and out the exhaust pipe, which used to glow red for 6 feet. The chaps who consider it marvellous to heat a baby's bottle in the V of a side valve Ford V8 have a lot to learn. I have cooked a full-size bush turkey in the F.W.D. engine room. The turkey was put in a petrol tin and started boiling on a camp fire then hung alongside the exhaust manifold. It was cooked by lunch time.

The steering column was vertical with the radiator just under the wheel and nothing so effeminate as a windscreen. The steel seat was the top of the engine compartment and was about 8 feet above ground.

One day when the radiator cap blew and spewed 16 gallons of boiling rust all over me all I could do was a swallow dive over the side not even pausing to change into neutral. As the engine

was on throttle control a la T model Ford, because the accelerator was too hot to rest one's boot on, it meant a trudge of 2 miles to the next sand ridge where she had stalled.

When the front drive was in the front wheels always took the line of least resistance which meant that in ordinary ruts it wasn't necessary to steer but in boggy conditions the front wheels would seek out soft spots up to 6 feet off the road, regardless of the front wheel angle. When it bogged in sand or mud the front, not the rear wheels, would jump or chatter and with the seat forward of the front wheels it was necessary to stand up and ride her like a bucking bronco as the impact of the hot seat on one's behind was terrific.

Getting moving after standing over night was a full time adventure. The clutch was a multi plate steel-bronze affair running in oil (Helle-Shaw). We used to reverse the names to describe the operation.

With the engine ticking over, clutch right in, hand on throttle and foot on gear lever the drill was to endeavour to synchronize the kick into gear with the snap opening of the throttle. If one was too slow with the throttle the engine stalled. If too soon with the throttle the kick-back on the gear lever would just about break one's leg. If everything went right, even when loaded the truck would leap off the mark like a dragster then settle down to a steady crawl until the clutch oil heated up. Nothing ever broke down on this truck except the drivers.

The last thing she did to me is still vivid enough to pop up in my dreams after an overfill of beer and crayfish. I had been trying to outrun a thunderstorm and had been blasting flat out through isolated pools and puddles. I charged down a good slope at about 40 onto a hard packed claypan and then everything came unstuck. Have you ever tried to control a truck and trailer loaded with 3 tiers of wool bales spinning and going nowhere in particular on a frictionless surface liberally studded with gum trees?

(Article supplied by Alister Cannon - thanks. ED.)

Bob and Beverley Graham have just become grandparents for the first time. Mother and daughter Olivia are doing well. Congratulations to the Grahams major, minor and tertius.

Bob has now got something other than his TB 14 to boast about!

This article originally appeared in 1930 or 1931 and was reprinted in "Classic Car" (U.S.). From there via a devious route it got to Paul Reed who has sent it in for publication.

When a Car Shimmies...

by W.K. Toboldt

Kate's not the only one who has perfected the art. But when a Classic does it, that's not good—and here's a few hints about what to do about it. This article originally appeared in the January 1931 edition of Automobile Trade Journal. Our gratifiede to Henry Auxin Clark, Jr. for submitting this feature.

There are two ways of learning whether a car shimmies, steers hard or has excessive tire wear. The first is by waiting until someone complains, and the other is by looking at the front tires. In practically every case (with the exception of lack of lubrication) where there are steering difficulties the tires will have excessive and uneven tread wear, which can be seen at a glance.

But it's a great deal easier to see the results than it is to locate the cause, and you can't tell what is wrong by squinting along the front wheels any more than you can tell a 0.005 oversize piston ring by the feel. While it is possible to check a front axle and the wheels without special equipment, the work can be done more quickly and accurately by means of special equipment.

These gauges measure the camber, toe-in and caster, and some manufacturers offer devices which will disclose a bent frame and shifted front and rear axles. Measuring or checking any one of these points is not sufficient. All must be tested to do a complete front-end job and to be sure that the trouble is licked. The reason for this is that all of the front axle characteristics are related, and changing one often will affect the others. In other words, you can't do a front-wheel alignment job by only measuring the toe-in, and you need more than a ball of string to do the job right.

Correcting camber and easter has been greatly simplified by special presses designed to hend the axle without removing it from the car.

To show how camber, toe-in and easter are related, we'll start with camber and describe what it is and what it does.

First of all, as you look at the front of an automobile you will note that the wheels are tilted out at the top. That is, the distance between the tops of the two front tires is greater than the distance between the bottoms. This is known as camber, and is shown in one of the illustrations.

Originally the camber angle was as much as 4 or 5 degrees on high-pressure tires, and many people believed that camber was used so that the wheels would be perpendicular to the surface of the highly crowned roads, claiming that this prevented rapid tire wear. However, wear could not have been a consideration, as the rear wheels have always been mounted at right angles to the axle and the tires have not been subjected to any unusual wear. The reason front wheels were cambered was to obtain easy steering by means of what is known as center-point steering and also reduce the side thrust on the king pins.

In the days of high-pressure tires the king pins were vertical.

Then with the wheels cambered, a line drawn through the king pins would strike the ground at approximately the same point as the center of the tire contacts on the ground. This is the condition known as center-point steering and the further these points are apart, the more difficult it is to steer the vehicle.

When the tire contacts the ground "outside" the point where the center line of the king pin would strike the ground, there would be a force (when the car is driven) tending to make the wheels toe-qut. When the tire contacts the ground "inside" the point where the center line of the king pin strikes the ground, there would be a force which would tend to increase the amount of toe-in. Naturally, under either of these conditions, it would require more effort to swivel the wheels. Cars are so designed that the tire center contacts the ground slightly "outside" the center line of the king pin so as to increase steering stability.

Now as to the side thrust on the king pins. The weight of the car transmitted to the ground through the wheels will tend to pull the wheels in at the top, resulting in side thrust on the king pins. This side thrust will be a maximum with vertical king pins and no camber in the wheels and is reduced to a minimum when the tires contact the ground at the same point as the center line of the king pins. Naturally, reducing this side thrust will make the car easier to steer.

Difficulties arose, however, when balloon tires and fourwheel brakes were introduced, which resulted in shimmy and rapid tire wear, the latter characterized by its uneven and spotlike condition.

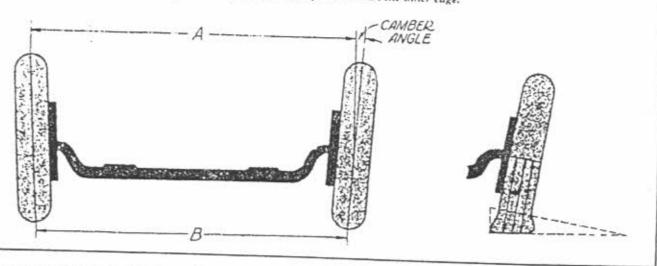
Obviously a balloon tire has a much greater area in contact with the ground than does a high-pressure tire. With a balloon tire on a cambered wheel, the tire surface in contact with the ground is actually a portion of a cone. That is, the radius of the outer edge of the tire is less than the inner edge. This condition is brought out in one of the illustrations.

Now when the car is driven, the section of the tire with the smaller radius will try to turn oftener, for each mile driven, than the section with the larger radius. This results in a scrubbing action on the tire which will wear the inner and outer edges of the tire very rapidly and leave the center section unworn. The wear on the edges is generally of a cup-like character and the wear is aggravated if the tires are under-inflated.

Reducing the amount of camber overcame this difficulty, but with the old-fashioned type of vertical king pins, hard steering would result. This led to the development of the inclined king pin which is used on all ears at the present time. In this design the wheel is given only one or two degrees of camber, but the top of the king pin is tilted away from the wheel so that its center line will intersect near the center of tire contact. Many mechanics, when describing this design, say that the camber was taken out of the wheels and placed in the king pins.

With the inclined king pins an interesting effect is caused

Below left: Looking at the front of the car, it will be noted that the wheels are tilted out at the top. In the figure the distance "A" is greater than "B" and the difference is the camber in inches. Camber may also be expressed in degrees. Below right: When the wheel is cambered, the portion in contact with the ground is shaped like a cone, the inner radius of the tire being greater than the outer radius. This results in rapid tire wear on the inner and outer edges, as the outer edge of the tire will try to turn more revolutions per mile than the inner edge.



which tends to keep the wheels in the straight-ahead position and in this way aids easter action.

This can best be described by considering a wheel spindle from which the wheel has been removed. As the spindle is swung back and forth it will be found that the end of the spindle will rise and fall, being at its highest point at what corresponds to the straight-ahead position and lowest in the extreme right and left position.

However, with a wheel mounted on the spindle it cannot rise and fall. Instead, the car will be raised when the wheels are cut to the right and the left. Therefore, the weight of the car will tend to keep the wheels from swiveling to the right or left, because of this effect of the inclined king pin.

Turning now to the necessity for toe-in, we find that its purpose also is to reduce tire wear and make the car easier to steer. In general, there are two explanations for toe-in. The first and more common is that when a car is driven, the tendency is to force the wheels apart at the front, and that it is therefore necessary to toe the wheel in a slight amount when the car is stationary, so that when the car is moving the wheels will be parallel. In addition, toe-in will take care of any spring or wear in the steering arms and tie rod.

The other explanation is based on the idea that when a wheel

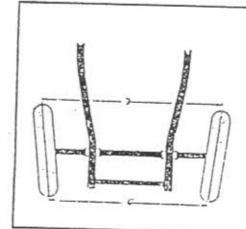
is tilted, that is, cambered, it will tend to roll in that direction and the wheels are therefore toed-in to overcome this tendency. Toe-in is, therefore, definitely connected with camber. The fact that a wheel will roll in the direction it is tilted is readily understood when one considers a bicycle, which can be steered by the rider shifting his weight to the side he wishes to turn.

Now having briefly covered camber and toe-in, there still remains easter. The purpose of easter is to keep the wheels automatically in the straight-ahead position. This effect is produced by tilting the top of the axle hackward. Caster in an automobile axle is just the same as the action of an ordinary furniture easter, and from which it takes its name.

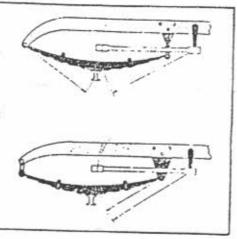
Caster used to be set at about 5 degrees, but since inclined king pins were adopted, caster has been decreased to about one to two degrees, as the inclined king pins aid the caster effect.

Insufficient caster will cause the car to wander and will require the constant attention of the driver, while excessive caster will make steering difficult and increase the straightening-up effect after a turn.

While the necessity for checking caster, camber and toe-in is appreciated by most mechanics, there are other features of the steering system that are often overlooked. Among these may be included the steering arms.



Lest: A cambered wheel will tend to roll in the direction it is tilted. To overcome this effect, wheels are toed-in at the front. Dimension "D" is therefore made greater than "C." Right above: Up and down movement of the front axle causes the drag link to move back and forth resulting in a shimmy condition. The center line of the drag link should pass through the front spring eye. Right below: Shackling the spring at the front reduces this condition also, as the axle and the end of the drag link move in nearly the same arcs.





Theoretically, lines drawn through the center of the king pins and the end of each steering arm should cross each other midway between the chassis side rails. According to the Ackerman principle, this point should be at the center of the rear axle, but on present-day cars this point is generally in front of the rear axle.

As you know, the front wheels are toed-in in the straightahead position, but on turns the wheels toe-out, and it is the angle and length of the steering arms that control the amount of toe-out on curves. This is necessary so that all the wheels will be turning about the same point. Naturally, if one of the steering arms is bent, this toe-out will be incorrect, the ear will steer hard in one direction or the other.

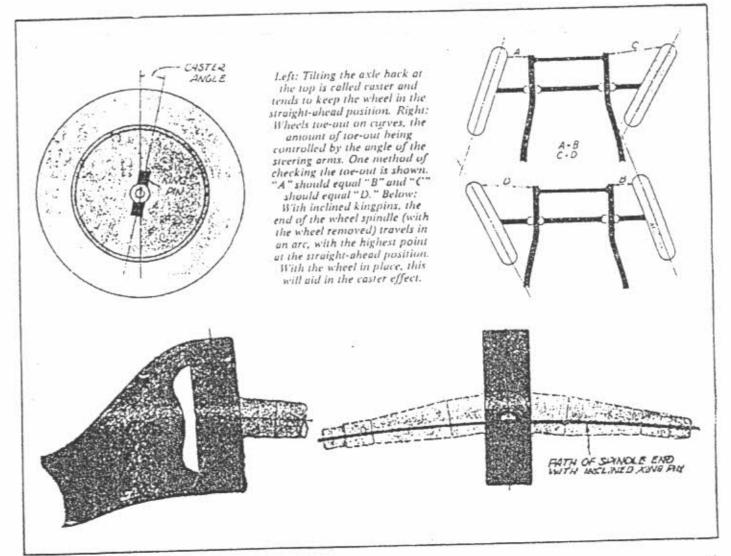
A mechanic not experienced with front-wheel alignment will often attempt to correct for a bent steering arm by adjusting the tie rod. This will correct the toe-in for the straight-ahead position only, and the only way to do the job is to bend the steering arms or install new ones. Incidentally, all manufacturers advise that front axle parts should be bent cold, as heating will weaken them as much as 50 per cent. One method of checking for bent steering arms is illustrated.

All of these factors affect steering, rapid tire wear and shimmy. Additional factors not directly connected to easter, cumber and toe-in, but which also have a bearing on steering troubles, are noted in the accompanying list.

When a Car Shimmies, Steers Hard, or Has Rapid Tire Wear, check for:

Incorrect camber

Incorrect caster Incorrect toe-in Bent steering arms Unbalanced wheel and tire Loose wheel bearings Worn king pins and bushings Bent frame Bent rear axle Shifted front axle Shifted rear axle Misulignment of drag link Incorrect adjustment of shock absorbers Too flexible springs Sagged springs Loose spring clips Worn spring bolts or mountings Unevenly mounted tire rim Bent wheel Out-of-round brake drums Under-inflated tires Tires of different weight and tread design on opposite wheels Weak front spring horns Improper lubrication Worn steering gear Loose drag link and tie rod joints Tight drag link and tie rod joints Unequal brake adjustment

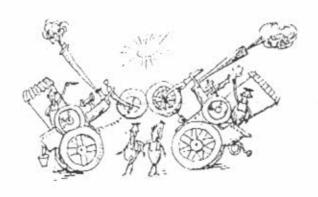


Dear John,

I would like to commend you on the quality of the Newsletter, especially the recent Rally edition.

DALE PARSELL.

SEPTEMBER NEWSLETTER COPY DEADLINE WEDNESDAY 28th AUGUST 1991.





(E.C.)

"SPAREPERSONS".

Vintage, Ccoff Hood, 37, Thomas St E. Doncaster.

37, Thomas St., E. Doncaster. Vic. 3109. Tel. 03 842 2181.

P.V.T.

Austin Tope, 8, Wimba Ave., Kev. Vic. 3044. Tel. 03 817 5163.

3 LITRE.

Kevin Bruce, P.O. Box 187, Maffra. Vic. 3860. Tel. 051 47 3096.

TA 14

Bob Graham, 15. Clarke Ave., Caulfield. Vic. 3162. Tel. 03 571 3886. National Alvis Spares offers this month:-

TA 14

Valve Caps	\$3.00	each
Wheel Nuts	\$1.00	each
Brake Drum	\$30.00	each
Grease Cap - Front Wheel	\$10.00	each
Stud - Front Wheel	\$1.00	each
Oil Filter Gauze	\$5.00	each

12/50 and 3 litre pedal pads have been ordered and should be available shortly. Price hopefully \$30.00 per pair, the same as the previous batch.

INTERCHANGEABLE PARTS

12/50 sub-frame car generators. The generator fitted to Fordson Major tractors is an ideal replacement. The outside diameter of the Fordson unit is smaller than the holding cradle but the difference can be made up with a suitable sleeve.

One of the features of the Fordson Major generator is that it has a mechanical rev. counter attachment which is ideal for 12/50 owners requiring a rev. counter drive. It is believed that M.G. TC owners use these generators as a replacement. It is understood from Colac Tractor Wreckers that such generators are readily available at around \$100.00.

Information provided by Ron Wilson. It is hoped that this will inspire further contributions from other members.

PRIVATEERS.

- WANTED. 1) Small brass dashboard plate which states "Supplied by Regent Motors" etc.
 - 2) Aluminium differential banjo housing to suit 14.75 or 16.95. Can exchange 12/50 housings (which are virtually identical) from 1923 or 1925.
 - 3) Two Hartford shock absorbers. 2x3 arm. 9 inches between centres.

Richard Unkles Tel. 03 857 9417.

<u>WANTED</u>. For 12/50 (to save me having to make them) Manifold. Complete gear lever. Complete hand-brake lever. Brake drum. Front spring shackle N 2449. Front wing stay N 3038. Hand-brake shaft drop lever N 4538. Bob Anderson, 163 Wellington Rd., Dianella. 6062 Tel. 09 275 3494

FOR SALE. 1928 14.75 Fabric bodied Saloon. Chassis and body in excellent condition. Mechanically complete, but requiring total restoration. Dale Parsell. Tel. 059 685 170 (A.H.) \$10,000. o.n.o.

FOR SALE. 12/50 complete chassis and mechanicals. Some restoration work done. \$15,000.

FOR SALE. 3 Litre wheels. Three road wheels with tyres of unknown condition (15 inch) to suit 3 litre cars.

Andre Chaleyer. Tel. 051 56 2220.

WANTED. Brass bodied S.U. carburettor. Type HV5. Semi horizontal. To fit S.A. Firefly. Ron Wilson, 22 Park Close, Vermont. Vic. 3133. Tel. 03 874 2450

